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DISEASES CAUSED BY BACTERIA AND FUNGI

FOGGIE, A. (1953). **The treatment of tick pyaemia of lambs with penicillin.**—*Vet. Rec.* **65,** 169-171. [Author's summary copied *verbatim.*] **2156**

Treatment with penicillin of lambs affected with tick pyaemia had only a slight effect on the death-rate. Recoveries were much more rapid, however, in treated than in untreated lambs and 20 per cent. more of the treated lambs reached the higher grades for the lamb sales.

WILLIAMS, R. E. O., RIPPON, J. E. & DOWSETT, L. M. (1953). **Bacteriophage typing of strains of *Staphylococcus aureus* from various sources.**—*Lancet.* **264,** 510-514. [Authors' summary modified.] **2157**

By means of bacteriophage typing, 1349 strains of *Staph. aureus* from normal persons and from patients with various forms of staphylococcal infection were classified into three broad groups which corresponded to, and were numbered in the same way as those recognized by serological typing.

Fulminating pneumonia complicating influenza was very commonly due to staphylococci of group I; food-poisoning was almost always due to strains of group III.

The group distribution of staphylococci from boils, whitlows, etc., and from cases of otitis was the same as that from the nose of normal persons; strains from lesions infected in hospital were commonly of group III, owing to the frequency with which strains of this group are penicillin-resisitant. Strains of group III were also more common in the faeces than in the nose of normal persons.

MITTON, R. L. (1949). **The field control of bovine mastitis.**—*Aust. vet. J.* **25,** 171-180. **2158**

A detailed description of the methods used to control and treat mastitis in a dairying district of South Australia. Treatment of clinical cases and of all infected quarters, revealed by mass sampling, was carried out; any quarter in which the presence of streptococci was detected was treated with penicillin, and quarters in which staphylococci were present with 1:10,000 acriflavine or sulphathiazole in oil. Strict attention was paid to hygiene, and to the removal of any precipitating factor, *e.g.* slippery floors in the bails, faulty pressure gauges on the milking machines etc. Emphasis was laid on the importance of the farmer's co-operation and the need for careful records.

In discussion on the paper various speakers emphasized the importance of attention to hygiene, dehorning, the use of correct pressure in milking machines, and the seasonal incidence of the disease.—N. WICKHAM.

BARRAT, E. (1953). Remarques sur l'étiologie et le traitement des mammites. [**Aetiology and treatment of mastitis.**]—*Rev. Méd. vét.* **104,** 139-145. **2159**

A general account, with no new information.—R.M.

KLEIN, P. & ENGELHARDT, H. (1951). Zur Frage der Reproduzierbarkeit biochemischer Merkmale bei Streptokokken. [**Discussion on the possibility of reproducing biochemical characteristics in streptococci.**]—*Z. Hyg. InfektKr.* **132,** 574-581. **2160**

A discussion of the biochemical characters of streptococci, with special reference to *Str. viridans* and subacute endocarditis in man. —E. G. WHITE.

NOTE.—*The* V.B. *references given in square brackets now refer to abstract numbers and not to page numbers.*

SALLMAN, B. (1951). **The process of hyaluronidase formation by hemolytic streptococci.**—*J. Bact.* **62**, 741-746. **2161**

Group A and group C streptococci gave rise to hyaluronidase-producing mutants having varying capacities for hyaluronidase production. The conditions affecting formation of the enzyme were studied.—A. H. LINTON.

LOPEZ Y LOPEZ, C. (1952). La pénicilline et la mammite gangréneuse. Action *in vitro* et *in vivo* sur le *Mastitidis gangrenosae ovis*. **[The effect of penicillin upon the organism of ovine gangrenous mastitis.]**—*Bull. Acad. vét. Fr.* **25**, 283-287. **2162**

Against Nocard's micrococcus, penicillin was bacteriostatic *in vitro* at one unit per ml. and bactericidal at 10–16 units per ml. A minimum of 5,000 units protected pigeons against the infection, if given not more than 2 hours after infection.

Early combined local and systemic treatment of infected ewes with about 200,000 units was advised.—G. P. MARSHALL.

STEIN, C. D. & STONER, M. G. (1952). **Anthrax in livestock during 1951 and comparative data on the disease from 1945 through 1951.** [In U.S.A.]—*Vet. Med.* **47**, 315-320. [Abst. from authors' summary.] **2163**

From a nation wide survey of the incidence of anthrax in livestock in 1951 it was found that 483 outbreaks in livestock were reported from 25 States, involving 113 counties, with a total loss of 2,753 animals. There were no major outbreaks. Of unusual interest is the large number of outbreaks of undetermined origin that occurred in swine in new areas. The total number of reported deaths in swine was 1,088 as compared with 1,001 in cattle. At establishments operating under federal meat inspection, 232 swine carcasses were condemned. Seven cases of agricultural anthrax in man were reported to the Bureau of Animal Industry, U.S.A.; 3 of these were veterinarians.

During the 7-year period 1945-51, there were 1,141 anthrax outbreaks in 35 States with losses of 11,257 head of livestock. Outbreaks in new areas were reported from 133 counties in 27 States. A greater number occurred in 1951 involving more counties than in any single year from 1945-50.

Reference was made to industrial anthrax in human beings.

SIKOROWSKI, K. (1952). Przypadek gruźlicy u konia. **[TB. in a horse.]** — *Méd. vét., Varsovie.* **8**, 127-128. **2164**

A clin. note on TB. in a horse.
—J. R. MITCHELL.

THORDAL-CHRISTENSEN, A. (1952). Et tilfaelde hos en ko af generaliseret aviaer tuberkulose med udskillelse af aviaere tuberkelbakterier i maelken. **[Generalised avian type TB. in a cow, with excretion of avian type tubercle bacilli in the milk.]**—*Nord. VetMed.* **4**, 577-587. [In Danish. English and German summaries. Abst. from English summary.] **2165**

A description of generalized avian-type TB. in a cow. There were positive reactions to both bovine and avian types of tuberculin, though the latter reaction was greater. It was stated that avian-type tubercle bacilli were found in milk from one quarter of the udder and in pus obtained from the oesophageal mucosa.

Autopsy revealed visible lesions in the uterus and the affected quarter, while further infection was microscopically demonstrable in the lungs and in the deep inguinal and supramammary lymph nodes.

GRÄUB, E. (1952). Grundsätzliches zur Frage der Bekämpfung der Rindertuberkulose. **[The control of TB. in cattle.]**—*Schweiz. Arch. Tierheilk.* **94**, 32-47. [English, French and Italian summaries.] **2166**

A general article emphasizing the difficulties of eradicating TB. in cattle in countries where there is extensive infection. The argument would not be accepted by everyone. G. advocated further research on immunization.

BEIJERS, J. A. (1951). Bovine tuberculose bij mens en dier. **[Bovine type TB. in man and animals.]**—*Tegen Tuberc.* **47**, 145-156. **2167**

A discussion on TB., its control in domestic animals and transmission from animals to man.
—C. A. VAN DORSSEN.

MITSCHERLICH, E. (1953). Die Ursache positiver Tuberkulinreaktionen bei Rindern mit grobsinnlich tuberkulosefreiem Zerlegungsbefund. **[Cause of positive tuberculin reactions in cattle free from macroscopic lesions of TB.]**—*Berl. Münch. tierärztl. Wschr.* **66**, 105-108. [English summary.] **2168**

A general discussion based on the literature.—R.M.

KISELEV, V. S. (1953). **[Raising healthy calves from cows infected with TB.**—*Veterinariya, Moscow.* **30**, No. 3. pp. 18-20. [In Russian.] **2169**

Although TB. in cattle in the U.S.S.R. is stated not to be widespread, wholesale vaccination, tuberculin testing and isolation of positively reacting cows even if clinically healthy are carried out. For calves born from

infected dams K. recommended isolation until mature both indoors and at pasture; feeding of colostrum for the first 3–4 days of life, followed by feeding on pasteurized milk from healthy cows; 3 tuberculin tests: at 20 days of age, when milk feeding ends and again 30 days later; slaughter of positively reacting calves and the disinfection of the quarters used; personnel to be TB.-free and have no contact with other farm animals; ban on visitors.—F.A.A.

Koch, W. (1953). Die Wirkung der östrogenen Hormone auf die Tuberkulose. [**Effect of oestrogens on TB. in cattle.**]—*Die Rindertuberkulose.* **2,** 28-36. 2170

K. discussed the effect on TB. of oestrogens normally present in the body as well as those administered by injection. Of 10 cows each injected with 0·5 g. dienoestrol, 5 (cases of pulmonary TB.) showed general improvement in health within 2–4 months. The remainder (4 generalized and one pulmonary TB.) did not improve.—R.M.

Buss, W. (1950). Die serologische Diagnose der Rindertuberkulose mit angetrocknetem Blut, bzw. angetrocknetem Blutserum. [**Serological diagnosis of TB. in cattle with dried blood or serum.**]—*LebensmTierarzt.* **1,** 97-101. 2171

An account of the use of the Meinicke flocculation test for the diagnosis of TB. using dried blood or serum as the material to be tested. Three thousand cattle were tested, the results being controlled either by P.M. examination of slaughter animals or by the i/d tuberculin test. Of 257 animals which gave positive reactions to the Meinicke test only 198 gave positive reactions to the i/d tuberculin test, 15 being doubtful and 44 negative. P.M. findings confirmed the results of the Meinicke test.

The test was considered to be a useful adjunct to the i/d tuberculin reaction.

—W. R. Bett.

Anon. (1951). Koninklijk besluit D. D. 1 Juni 1951 houdende regeling van de bestrijding der rundertuberculose. [**Belgium: Law of the 1st June 1951 regarding the control of TB. in cattle.**]—*Vlaam. Diergeneesk. Tijdschr.* **20,** 212-217. 2172

The law provides for the control of TB. of cattle in Belgium on a voluntary basis by unions of farmers subsidized by the state, also for free i/d tuberculin testing, with compulsory slaughter of clinical cases. Herds free from reactors are so certified.—C. A. van Dorssen.

Vaccarezza, R. F. & Cetrángolo, A. (1950). La sobre-infección tuberculosa experimental en animales tratados con estreptomicina. [**Superinfection in tuberculous animals treated with streptomycin.**]—*An. Cat. Pat. Tuberc. B. Aires.* **12,** 53-62. [English summary.] [Abst. in *Bull. Hyg., Lond.* **27,** 551. (1952), slightly modified.] 2173

The point of this work was to discover if g. pigs infected with streptomycin-sensitive bovine type tubercle bacilli, and under treatment with streptomycin, could be superinfected with streptomycin-resistant human type tubercle bacilli at various periods after first infection. The first infection was made by s/c inj. of 0·1 mg., and the superinfection (in the opposite groin) by i/d inj. of 0·1 or 1·0 mg. Treatment with 15 mg. streptomycin each day was continued from the time of first infection to death of the animals, which were killed at different intervals. In no case was this sufficient to cure the animal. The results showed that the lesions of primary infection developed (to caseation in some animals) with considerable enlargement of the inguinal and sublumbar lymph nodes, and that the superinfection given 25 days after first infection gave rise to a small ulcer of the skin, with some enlargement of the nodes without caseation at 89 days in animals which received 0·1 mg. in the superinfection dose, but with some caseation in those which received 1·0 mg. Control animals received the injection of streptomycin-resistant human type bacilli but were not treated. Their lesions progressed in the usual way. Cultures from lymph nodes corresponding to the first infection showed streptomycin-sensitive organisms; those corresponding to superinfection showed streptomycin-resistant organisms.

Other animals received superinfecting doses 9 and 20 days after first infection, and from the spleens of these animals cultures were made on the Herrold medium containing 100 μg. streptomycin per ml. Growth would indicate that streptomycin-resistant bacilli from the superinfection had spread to the internal organs, and growth did in fact occur in cultures from the animals killed at 88 or 142 days after superinfection. Controls inoculated only with streptomycin-resistant organisms gave cultures from 13 days onwards.

It was evident that treatment did not prevent the development of some immunity to the superinfecting dose. The lesions which devel-

oped from the superinfection were relatively slight, and slow, and there was evidently delay in the spread of the superinfecting organisms to the internal organs, which confirms opinions long held.

HAMILTON, M. A. & GEEVER, E. F. (1952). **The use of potassium iodide in combination with streptomycin in the treatment of experimental tuberculosis in guinea pigs.**—*Amer. Rev. Tuberc.* **66,** 680-698. [French and Spanish summaries.] **2174**

In g. pigs experimentally infected with TB., potassium iodide appeared to augment the therapeutic effect of streptomycin only in those which had previously been vaccinated with B.C.G. In unvaccinated g. pigs the administration of pot. iod. was detrimental. Several g. pigs developed paralysis due to TB. meningitis during the experiments, and most of these belonged to the unvaccinated group which had received pot. iod.—R.M.

SCHAEFER, W. B. (1952). **Growth requirements of dysgonic and eugonic strains of *Mycobacterium tuberculosis* var *bovis*.**—*J. exp. Med.* **96,** 207-219. **2175**

Dysgonic strains of bovine type *M. tuberculosis* require fatty acids for their development in culture; eugonic strains are independent of fatty acids. Sodium pyruvate can replace fatty acid requirements.—E. J. L. SOULSBY.

PHILPOT, F. J. & WELLS, A. Q. (1952). **Lipids of living and killed tubercle bacilli.**—*Amer. Rev. Tuberc.* **66,** 28-35. [French and Spanish summaries.] **2176**

Using petroleum ether, ether, and chloroform, 4 main components were extracted from live tubercle bacilli and from tubercle bacilli killed either by heat or organic solvents. The components were acetone-soluble fats, free mycolic acid, an ester of mycocerosic acid with phthiocerol, and esters of polysaccharide with mycolic acid and other fatty acids.

—W. R. BETT.

BERGMANN, J. (1953). Vergleichende Untersuchungen mit Geflügel-Alttuberkulin und "synthetischem" Geflügeltuberkulin. **[Comparative research on avian type Old Tuberculin and "synthetic" avian type tuberculin.]**—*Berl. Münch. tierärztl. Wschr.* **66,** 93-94. **2177**

There was little difference in the extent and specificity of the reaction between Old and P.P.D. avian types of tuberculin when used for the tuberculin testing of 170 hens.—R.M.

KOURILSKY, R., DECROIX, G. & GANTER, P. (1952). Études sur l'allergie tuberculinique. La transmission de l'allergie. **[Tuberculin allergy and its passive transfer.]**—*Rev. Immunol.* **16,** 333-372. **2178**

In agreement with previous work by Chase [*V.B.* **19,** 1171], Cummings *et al.* [*Ibid.* 1172], Kirchheimer & Weiser, and others, the authors demonstrated that passive transfer of allergy is possible provided that the injected material contains cells from the lymph nodes, peritoneal exudate, or spleen. Most of the cells to be found in preparations from macerated organs are small mature lymphocytes. When cells from the sources mentioned were mixed with tuberculin and injected i/d into g. pigs they produced a reaction identical, both histologically and to the naked eye, with the tuberculin reaction.

Prolonged heating and maceration rendered the allergic cells inactive.

The active substance in the cells did not diffuse from them and could not be recovered from the supernatant liquid.

The i/d reaction in the injected g. pigs did not differ from that in normal g. pigs following the introduction of the cells alone except in the intensity of the oedema, the vascular dilation, and the greater proliferation of the cells. The reaction never occurred before 48 hours after injection.

The authors discussed the significance of these findings, and their relation to recent work.

—A.S.

KING, M. B., KNOX, R. & WOODROFFE, R. C. (1953). **Investigation of antituberculous substances. An agar diffusion method using *Mycobacterium smegmatis*.**—*Lancet.* **264,** 573-575. [Authors' summary modified.] **2179**

An account of an agar-plate diffusion method using *M. smegmatis* as the test organism for investigating substances for antituberculous activity. Dubos agar plates are inoculated with the culture and blotting-paper strips soaked in the material to be tested are placed on the inoculated medium.

This technique was found to be of use (1) in screening rapidly a large number of compounds for inhibitory activity against mycobacteria, as judged by the size of inhibition zones; (2) in demonstrating antagonism or synergism between compounds; (3) in detecting the development of resistant colonies and their suppression by combinations with other substances; and (4) in detecting substances which stimulate the growth of mycobacteria.

YEGIAN, D. & BUDD, V. (1951). **Heterogeneous character of streptomycin-dependent mutants of a mycobacterium.**—*J. Bact.* **61**, 161-165. 2180

A report of the isolation of 6 stable colony types of streptomycin-dependent variants from a single colony of a non-pathogenic mycobacterium.—A. H. LINTON.

SIKES, D. (1953). **Sensitivity studies with repeated intradermal johnin tests in cattle naturally infected with *Mycobacterium paratuberculosis* (Johne's disease).**—*Amer. J. vet. Res.* **14**, 12-15. 2181

A total of 1,440 i/d johnin tests were made at 14, 16, 18 and 20-week intervals on cattle naturally infected with Johne's disease. They supported the following conclusions:—(1) Cattle infected with Johne's disease will react to the i/d johnin test at a previously unused site, even though they fail to react when repeated tests are made at the same site. (2) A partial local desensitization takes place when repeated i/d johnin tests are made at the same site. (3) If the same testing site is used, a lapse of 20 weeks should take place before re-testing and it is preferable to select a new site for each test. S. considered a properly applied johnin test to be highly sensitive in the diagnosis of *M. johnei* infection in cattle.—A.S.

LARSEN, A. B. & VARDAMAN, T. H. (1953). **The effect of isonicotinic acid hydrazide on *Mycobacterium paratuberculosis*.**—*J. Amer. vet. med. Ass.* **122**, 309-310. 2182

Although the authors found that isonicotinic acid hydrazide inhibited the growth of cultures of *M. johnei* at a level of 25 μg. per ml. of medium, it was not a satisfactory therapeutic agent in one case of advanced Johne's disease.—A.S.

LARSEN, A. B. & VARDAMAN, T. H. (1952). **The effect of viomycin, 4:4′ diamino diphenyl sulfone, and other agents on *Mycobacterium paratuberculosis*.**—*Amer. J. vet. Res.* **13**, 466-468. [Authors' summary modified.] 2183

In vitro studies of 4:4′ diamino diphenyl sulphone, four thiosemicarbazones, and viomycin indicated that viomycin was the only one that inhibited the growth of *M. johnei* when used in low concentrations. 4:4′ Diamino diphenyl sulphone, administered orally in daily doses not exceeding 35 mg./lb. body wt. over a period of 28 days, initially resulted in brief temporary improvement of one cow in an advanced stage of Johne's disease.

GWATKIN, R. (1952). **Tongue lesions in cattle apparently caused by *Corynebacterium pyogenes*.**—*Canad. J. comp. Med.* **16**, 422-425. 2184

C. pyogenes was recovered from tongue lesions in 7 calves which had been inoculated with suspected F. & M. disease specimens.

—T. MOORE.

ABD-EL-MALEK, Y. & GIBSON, T. (1952). **Studies in the bacteriology of milk. III. The corynebacteria of milk.**—*J. Dairy Res.* **19**, 153-159. [Authors' summary modified.] 2185

The corynebacteria that were isolated by non-selective methods from raw and pasteurized milk were of two main types: (1) heat-sensitive diphtheroid organisms which appeared to be derived principally from the animal body, and (2) thermoduric saprophytes originating from dairy equipment. The characters of group (2), which were discussed in detail, indicated that all the cultures examined belonged to a single species, *Corynebacterium lacticum*. Reasons were given for classifying that species in *Corynebacterium* and for suppressing the genus *Microbacterium*.

MADDY, K. T. (1953). **Caseous lymphadenitis of sheep.**—*J. Amer. vet. med. Ass.* **122**, 257-259. [Author's summary modified.] 2186

Caseous lymphadenitis is an important disease of sheep in the U.S.A. and has not received adequate attention as to diagnosis or prevention on the farm and ranch.

MIR CHAMSY, H. & NAZARI, F. (1949). Contribution à l'étude du traitement de la morve expérimentale du cobaye par l'anamorve, la sulfadiazine, la pénicilline et la streptomycine. **[Treatment of glanders in the g. pig.]**—*Arch. Inst. Hessarek.* No. 6. pp. 5-14. 2187

In tests on g. pigs infected with *Pfeifferella mallei* 'Anamorve' (a phenol-treated lysate of *Pfeifferella*), and to a greater extent, sulphadiazine, were curative, but both penicillin and streptomycin hastened death.—A.S.

PARNAS, J. & STEPKOWSKI, S. (1952). Malléine P.S. **[Mallein.]** [P.S. refers to authors' names.]—*Bull. Off. internat. Epiz.* **37**, 45-48. 2188

A 5-day culture suspended in distilled water was submitted to repeated freezing and thawing to destroy the bacterial cells and then autoclaved at 120°C. for an hour the authors found that the product was more sensitive and specific than conventional types of mallein.

—G. V. LAUGIER.

BRYGOO, E. R. (1952). Un diagnostic différentiel d'exception *Malleomyces pseudo-mallei* et *Bacillus laterosporus*. [**Differentiation of *Pfeifferella whitmori* from *Bacillus laterosporus*.**]—*Ann. Inst. Pasteur.* **83,** 138-139. 2189

The isolation of *B. laterosporus* from a blood sample examined for *Pf. whitmori* supports the view that diagnosis of melioidosis should not be made without g. pig inoculation. *B. laterosporus*, an organism found in soil, water or dust, could not be distinguished by its cultural and biochemical characters from *Pf. whitmori*.—E. G. WHITE.

PLACIDI, L., HAAG, J. & SANTUCCI, J. (1953). Broncho-pneumonie contagieuse à Pasteurella du porc. [**Contagious broncho-pneumonia in pigs caused by *Pasteurella*.**]—*Rec. Méd. vét.* **129,** 86-89. 2190

Pasteurella organisms were isolated from an outbreak of broncho-pneumonia in pigs. The disease was reproduced by the inoculation of healthy pigs with the *Pasteurella* strain isolated. An autogenous vaccine proved effective.—R.M.

GARNHAM, P. C. C. (1949). **Distribution of wild-rodent plague.**—*Bull. W.H. Org.* **2,** 271-278. 2191

It is pointed out that "wild-rodent plague" is not a sufficiently comprehensive term, since the condition affects also shrews, opossums and even carnivora. The synonym, "sylvatic plague," is a misnomer, since the condition is essentially one found in the steppe, veldt or plain, and not in the forest.

The geographical limits of wild-rodent plague are known precisely in a few countries only. The dividing line between wild-rodent plague and plague affecting domestic rodents is an arbitrary one, since field rats may also to a lesser extent be house rats while rodents that were originally domestic (*e.g.* the multimammate mouse in parts of Africa) have been driven back into the field by black rats. The criteria of wild-rodent plague originally drawn up by A. MACCHIAVELLO (1941). *Of. Sanit. Panamericana.* Publ. No. 165, Washington, D.C. is adopted, *viz.* (1) it occurs independently of domestic rat infection; (2) it appears among wild rodents with *Pasteurella pestis* demonstrable either in the rodents or in their fleas; (3) there is an absence of fleas other than those of wild rodents.

The foci of wild rodent plague may be divided into two fundamentally distinct groups, (a) involving the foci where the wild species are primarily involved in the infection, as in Central Asia; (b) including foci in which wild species are secondarily involved, as, *e.g.* in S. African ports whence infection passes from the domestic *Rattus rattus* to the domestic striped mouse, *Rhabdomys pumilio* (which is said to act as a "liaison" carrier) and thence to the gerbils of the veldt. Up to the present time the secondary form does not appear to have been accompanied by any large-scale human epidemics.

Geographical lists are given of species that have been found spontaneously infected with plague or are strongly suspect on epidemiological grounds. Ancient records (*e.g.* the infection in hares which has long since disappeared from England) are not included. The lists for Commonwealth territories are as follows: CEYLON: *Funambulus palmarum, Bandicota malabrica* and *B. gracilis;* SOUTHERN INDIA: *Funambulus* sp., *Mus booduga, Golunda ellioti, Bandicoota malabrica* and *B. kok, Tatera* sp.; NORTHERN INDIA: *Bandicota indica* and *B. bengalensis;* S. AFRICA: *Tatera lobengulae* and other gerbils, *Geosciurus capensis, Mastomys coucha, Rhabdomys pumilio* and other field-mice, *Desmodillus auricularis, Myotomys granti* and other veldt rats, *Malacothrix typicus, Lepus capensis* and other hares; S.-W. AFRICA: *Mastomys coucha, Tatera schinzi;* BECHUANLAND and the RHODESIAS: *Tatera brantsi* and other gerbils, *Mastomys coucha, Thallomys damarensis* and other tree-rats, *Pedetes cafer, Lepus* sp., *Geosciurus inauris,* together with about 25 other rodents of less importance; NYASALAND: *Saccostomus campestris;* GOLD COAST: *Cricetomys gambianus;* KENYA, UGANDA, and TANGANYIKA TERRITORY: *Mastomys coucha, Pelomys fallax, Grammomys* sp., *Otomys* sp., *Arvicanthus abyssinicus, Lemniscomys massaicus;* ALBERTA: *Citellus columbianus;* SASKATCHEWAN: *Citellus richardsoni.*

—ALASTAIR N. WORDEN.

KALIKIN, B. (1951). Acido-profilaska i acido-terapija pasteureloza. [**Acid prophylaxis and acid therapy of pasteurellosis.**]—*Veterinaria. Zborn. Radova Izoblasti anim. Proizvod.* **1,** 20-44. [In Croat. Abst. from English summary.] 2192

In vitro the following acids rapidly killed *Pasteurella* organisms in broth cultures:—hydrochloric, citric, acetic, lactic (all 1% dilutions) and salicylic (0·125%). Hens experimentally infected with *Pasteurella* were given 10 ml. of 1% hydrochloric or acetic acid 3 times daily *per os*. Six out of 47 and the 11 controls died. The survivors were not carriers, and many had acquired an immunity. Hens in contact with infected birds and in infected buildings were protected by the administration of acid as above.

—R.M.

BRUDNJAK, Z. & KRALJ, M. (1952). Vrijednost aglutinacije u dijagnostici svinjskog vrbanca. I. Aglutinini za antigen E. rhusiopathiae suis u krvi klinički zdravih svinja i u krvi svinja bolesnih (od 1 do 3 dana) od svinjskog vrbanca. **[The unreliability of the agglutination test in diagnosis of swine erysipelas.]**—*Vet. Arhiv.* **22**, 51-59. [English and German summaries. Abst. from English summary.] 2193

The authors stated that, owing to the presence of agglutinins in high titre in the blood of apparently healthy pigs, the agglutination test is valueless in *E. rhusciopathiae* infection. —A. J. STEVENS.

GLEDHILL, A. W. (1952). **The immunizing antigens of *Erysipelothrix rhusiopathiae*. The role of the L-antigen.**—*J. gen. Microbiol.* **7**, 179-191. [Author's summary slightly modified.] 2194

Vaccines were prepared by formolizing cultures of *E. rhusiopathiae* and precipitating with aluminium hydroxide gel (AG). Fifty per cent of mice were protected against about a thousand lethal doses. Two (Ru and VYS) of eleven strains yielded highly potent vaccines. Serum in the medium increased the potency of vaccines and for one of the strains liver extract was needed in the medium to give potent vaccines. In general, vaccines protected well against heterologous strains but protection was relatively poor against one of these.

A soluble antigen present in culture fluids induced in rabbits antibodies protecting mice and agglutinating suspensions of *E. rhusiopathiae* grown in the presence of serum. This soluble antigen was thermolabile. In these respects it resembles the L-antigen, differing only in being detached from the surface of cells. Soluble antigen was precipitated with AG, yielding fairly good vaccines. Cells freed from media were similarly precipitated, yielding rather better vaccines. It is suggested that cells yield vaccines of high potency when they have produced and retained a relatively large amount of L-antigen.

KOBUSIEWICZ, T. (1952). L'immunisation contre le rouget du porc avec le vaccin unique selon Staub. **[The swine erysipelas vaccine described by Staub.]**—*Bull. Off. int. Epiz.* **38**, May. pp. 150-161. [English summary.] 2195

Some 6 million pigs in Poland were treated with the vaccine over a period of 3 years with good results.—G. P. MARSHALL.

JACKSON, F. C. (1953). **Infectious keratoconjunctivitis of cattle.**—*Amer. J. vet. Res.* **14**, 19-25. 2196

J.'s work led him to consider that *Haemophilus bovis* is the specific aetiological agent of infectious keratoconjunctivitis of cattle in Texas. It is not stable and dissociates readily from a smooth virulent type to a rough avirulent type: antibodies are produced by spontaneous or experimental infections.

The scrotal sac of the rabbit is very susceptible to injections of *H. bovis*, which produce a severe haemorrhagic necrosis.—A.S.

BARNER, R. D. (1952). **A study of *Moraxella bovis* and its relation to bovine keratitis.**—*Amer. J. vet. Res.* **13**, 132-144. 2197

Haemophilus bovis was isolated from 92 of 95 acute cases of keratitis, but was not demonstrated in 36 healthy cattle. Experimentally, the condition was reproduced in 4 calves infected *via* the conjunctiva with culture. The incubation period was 15–21 days. Attempts to infect rabbits, g. pigs and sheep failed. B. concluded that *H. bovis* is the cause of infectious bovine keratitis in Kansas. He discussed world literature on bovine keratitis.

—C. C. BANNATYNE.

BORTREE, A. L., SHOOK, J. C., CHANG, K. H. & DAWDY, M. L. (1952). **Clinical observations on the use of aureomycin for the prevention and treatment of calf scours.**—*Progr. Rep. Pa. agric. Exp. Sta.* No. 63. pp. 3. 2198

The oral administration of 500 mg. of aureomycin to calves at birth reduced the incidence of scour and lessened the severity of the condition in affected calves; the administration of a further dose of 500 mg. was normally curative. Of 14 calves injected i/m 4 died. —A.S.

JACKSON, B. N. (1952). ***Bact. coli* infection as a cause of agalactia in the sow.**—*Vet. Rec.* **64**, 194-195. [Abst. from author's summary.] 2199

J. recorded agalactia in sows and also virulent scours in piglets, attributed to *Bact. coli*. He suggested that there was some evidence of venereal origin.

CLARENBURG, A. & ROEPKE, W. J. (1952). S. bareilly-infectie bij kuikens. **[*Salmonella bareilly* infection in chicks.]**—*Tijdschr. Diergeneesk.* **77**, 174-178. [English, French and German summaries.] 2200

An account of *S. bareilly* infection in chicks, 1–14 days old. There was a 10–75% mortality and high death rate of infected

embryos. Good results were obtained when the incubators were fumigated with formalin.
—C. A. VAN DORSSEN.

MANSJOER, M. (1951). Salmonellainfektionen bei Hühnern auf Java. II. Salmonellose beim Menschen nach Konsumption eines Hühnereies. **[Salmonella infection in poultry in Java. II. Salmonella infection in man from infected eggs.]**—*Hemera Zoa.* **58,** 254-258. [In German. Indonesian summary.] **2201**

S. typhi-murium var. *copenhagen* was isolated from the faeces of a human being with gastro-enteritis. The patient had eaten a lightly fried hen's egg which was considered to have been the source of infection, as there had been an outbreak of salmonella infection in the flock from which the egg originated and the fowls had been given *S. typhi-murium* vaccine.
—C. A. VAN DORSSEN.

ZAGAEVSKI, I. S. (1952). [*Salmonella typhi-murium* **infection in duck eggs. Hygiene and control.**]—*Veterinariya, Moscow.* **29,** No. 10. pp. 34-38. [In Russian.] **2202**

The percentage of infected eggs rose from *nil* in January to 18 in April, dropping thereafter; the incidence was proportional to the extent of soiling by faeces. Infection of new-laid eggs was mainly on the shells, not in the yolks; after 2–4 weeks, however, at 17–20°C. and 70–75% humidity, the ratio of infected sites was reversed. Hatching of eggs from healthy ducks was 75%, from infected 52%; the latter infected healthy eggs and ducklings in the incubators. Tests and findings on the conditions promoting penetration of the *Salmonella* organisms through the shells were described; *Penicillium, Aspergillus* and *Mucor* spp. on the shells aided this penetration.

Five preparations for cleaning eggs before incubation were tested. Of those treated with 1·5% solution of $CaOCl_2$ 88·7% hatched, against 71% in controls. For preserving, eggs should be treated with 1·5% solution of $CaOCl_2$, then dipped in 5% solution of tannin and then in a casein-lime-silicate solution. Kept dry at 16–20°C., 85% remained fresh for 4 months.—F.A.A.

DOLD, H. & BROSCHERT, A. (1951). Die Infektion - verhütende (Infektionsgefahrvermindernde) Wirkung eines unschädlichen Milchkonservierungsmittels (MX) bei absichtlich mit S. breslau infizierter Milch. **[Tests of the use of a proprietary preservative for milk infected with** *S. typhi-murium.***]**—*Z. Hyg. InfektKr.* **133,** 525-533. **2203**

A proprietary preparation "MX" (stated to contain metallic salts and sulphuric acid benzol derivatives) added to milk artificially infected with *S. typhi-murium* tended in small-scale experiments to render the milk innocuous to g. pigs.—A. MAYR-HARTING.

PRITULIN, P. I. (1952). **[Methods of diagnosing brucella infection in horses.]**—*Veterinariya, Moscow.* **29,** No. 9. pp. 28-29. [In Russian.] **2204**

An account of tube and rapid plate agglutination tests and c.f. tests on 5,435 horses. It it stated that a positive c.f. reaction with a titre of 1:50 and over, together with clinical signs, was the only reliable indicator of infection. Horses with a positive or doubtful agglutination reaction at a titre of up to 1:50 but with a negative c.f. reaction and no clinical signs remained healthy and failed to spread the infection.—F.A.A.

GARGANI, G. (1951). Un episodio di brucellosi bovina da "Br. abortus" e un contributo alla epidemiologia della brucellosi umana. **[An outbreak of bovine brucellosis with notes on the infection in the attendants.]**—*Arch. vet. ital.* **2,** 407-416. [English, French, German and Spanish summaries.] **2205**

During 1950 when an epidemiological investigation of brucella infection was made at the Centre for the Study of Brucellosis, Institute of Hygiene and Microbiology, Florence, *Br. melitensis* was the only species isolated from human beings in Tuscany. *Br. abortus* infection is considered rare in that province.

G. gave an account of a localized outbreak of *Br. abortus* infection affecting 5 cows in a small herd of 14 attached to a hospital and of serological tests on the personnel. While none of the latter had a recent history of brucella illness, the blood serum of all 26 of them yielded positive agglutination reactions. *Br. abortus* isolated from the milk of two cows had the characters of the strains isolated in the U.S.A.
—F.E.W.

WASHKO, F. V., DONHAM, C. R. & HEIMLICH, A. (1952). **Response of cattle to brucella following sexual stimulation and brucella exposure during early calfhood.**—*Amer. J. vet. Res.* **13,** 437-440. [Authors' summary modified.] **2206**

Young female calves injected with gonad-stimulating hormones and exposed to *Br. abortus* before puberty became infected, as measured by blood serum agglutination response, whereas control calves which had no such hormone stimulation failed to become infected when similarly exposed. The agglutinins

in the experimental calves persisted at rather high levels for 2 months after which titres gradually receded until they were essentially negative after 6 months. Challenge exposure of these animals to virulent *Br. abortus* during their first pregnancy failed to show increased resistance as a result of prepubertal infection, although there was a possible alteration in the abortion rate.

Tul'chinskaya, V. P., Tkachenko, A. F. & Demchenko, A. V. (1952). **[Use of the preparation "ASD" in brucella infection in sheep.]**—*Veterinariya, Moscow.* **29,** No. 2. pp. 17-20. **2207**

The preparation "ASD" [Antiseptic Stimulant Dorogov] is an extract derived from the histolysis of animal tissue and has been used as a stimulant, the claim being that it benefits all physiological functions, reduces the action of toxins and acts as an antibiotic and antiseptic against staphylococci, brucella and pasteurella infections, TB. and other infections.

"ASD" was given either *per os* or i/v to 100 sheep infected with brucella [type not stated], with 61 controls. All were tested by agglutination and c.f. reactions and by precipitin and skin allergy tests before, after one month and again after seven months' treatment. When given by the i/v route the agglutination, precipitin and allergic reactions disappeared, but 25% were still positive to the c.f. test. The controls were very much slower to recover.—F.A.A.

Lembke, A., Arndt, G. & Körnlein, M. (1950). Auftreten eines Stammes Brucella abortus (Schmidt et Weiss) Meyer et Shaw mit den Eigenschaften eines Kulturstammes in einem Rinderbestand, sowie Ermittlung titernegativer Brucellenausscheider. **[A strain of *Brucella abortus* isolated from cows immunized with Strain 19 and diagnosis in cows which excreted the organism but yielded negative reactions to the agglutination test.]** —*Zbl. Bakt. I.* (*Orig.*) **156,** 87-92. **2208**

In a herd of which some animals had been immunized with vaccine (*Br. abortus* Strain 19), a strain with the properties of the vaccine strain could be isolated 2 years later from the placentas of immunized and of non-immunized cows. Some of the cows that were found to be excreters of *Br. abortus* had very low, others high agglutinin titres; some gave birth to normal calves at the normal term, others aborted.—A. Mayr-Harting.

Jones, L. M. (1953). **Further studies of the pathogenicity and immunogenicity of mucoid variants of *Brucella abortus* for guinea pigs.** —*J. infect. Dis.* **92,** 26-32. [Author's summary modified.] **2209**

Although inoculation of g. pigs with mucoid variants of *Br. abortus* (strain SMR 2308M) did not give lasting protection against subsequent infection with smooth brucella of the same strain, there was some evidence that the multiplication of smooth cells was inhibited for short periods of time. Mucoid organisms persisted in the animal tissues in the presence of infection with smooth brucella for as long as 11 weeks. G. pigs infected with mucoid brucella did not produce antibodies for either the mucoid or smooth organisms that could be demonstrated by agglutination, agglutinin absorption, antiglobulin sensitization or conglutination complement-absorption tests. Antibodies to smooth antigen were detected by all methods in the serum of g. pigs 3 weeks after the introduction of smooth brucella. The antiglobulin test gave higher end points than the direct agglutination test with sera reacting with the smooth antigen, but these methods did not reveal antibodies which were not detectable by the direct agglutination test.

Edgington, B. H., King, N. B. & Frank, N. (1952). **Comparative tests of the protective value of Huddleson's mucoid and Strain 19 vaccines in cattle. II.**—*Amer. J. vet. Res.* **13,** 441-445. [Abst. from authors' summary.] **2210**

One group of heifer calves selected from a negatively-reacting herd and ranging from 8 to 15 months old was given Huddleson's M vaccine, another strain 19 vaccine, and a third left unvaccinated as controls. During the fourth to sixth months of pregnancy, and approx. 16 months after vaccination, each heifer was given 750,000 viable organisms of virulent culture, into the conjunctival sac. The organism was grown from 5 of 6 unvaccinated controls, 3 of 6 given M vaccine and one of 5 given strain 19 vaccine.

Hauduroy, P. & Tanner, F. (1952). Lyophilisation des antigènes bactériens brucelliques pour les sérodiagnostics. **[Lyophilization of *Brucella* antigens.]**—*C. R. Acad. Sci., Paris.* **234,** 2654-2655. **2211**

The authors described a technique whereby lyophilized *Br. abortus* antigen remains viable for at least one year and resistant to a temp. of 50°C. for 6 hours.—G. V. Laugier.

Wellmann, G. (1952). Experimentelle Untersuchungen über die Möglichkeit der Brucellenübertragung durch Insekten. **[Experi-**

mental transmission of brucellosis by insects.] —*Zbl. Bakt. I.* (*Orig.*) **159,** 71-86. [English, French and Russian summaries.] 2212

Mechanical transmission of *Br. abortus* to cows, *Br. suis* to sows and *Br. melitensis* to goats was effected by the bites of infected *Stomoxys calcitrans* and various *Tabanus* spp. With more difficulty cows could be infected by exposing injured skin or eyes to infected *Musca domestica*. W. suggested the possibility that such transmission may occur naturally.

—J. E. Smith.

Godglück, G. (1952). Die pathologisch-anatomischen und -histologischen Veränderungen bei mit Brucellosebakterien (Abortus Bang, Suis, Melitensis) infizierten Meerschweinchen und ihre diagnostische Bedeutung. [**The lesions caused in g. pigs by** *Br. abortus, Br. suis* **and** *Br. melitensis.*]—*Zbl. Bakt. I.* (*Orig.*) **159,** 63-70. [English, French and Russian summaries.] 2213

In the g. pig *Br. suis* produced characteristically marked nodular changes in the spleen, liver and testicles, with a tendency to suppuration and giant-cell accumulation. *Br. melitensis* produced slighter changes, while *Br. abortus* produced only splenic enlargement and greyish, miliary foci in the liver.—J. E. Smith.

Renoux, G. (1952). Une nouvelle "espèce" de *Brucella*: *Br. intermedia*. [*Brucella intermedia,* **a new species.**]—*Ann. Inst. Pasteur.* **83,** 814-815. 2214

R. proposed the name *Br. intermedia* (n. sp.) for 18 brucella strains from Tunis resembling *Br. abortus* antigenically, but *Br. melitensis* in most other respects.—J. E. Smith.

Victor, J. & Valliant, J. R. (1952). **The origin and function of opsonins in experimental brucellosis of guinea pigs.**—*J. infect. Dis.* **91,** 207-215. [Authors' summary modified.] 2215

The plasma opsonin titre of g. pigs with *Br. suis* infection was related to the extent and intensity of specific lesions. Opsonin was present in higher titres in fluid from tissues with lesions than in blood plasma in early infection. In later stages of infection opsonin in blood plasma was higher in titre than in tissue. Non-specific inflammatory tissue in g. pigs with passively transferred opsonins for brucella did not absorb opsonins even when the tissue contained brucella. The combined data indicated that brucella opsonins are formed in specific lesions of brucella infection.

Victor, J., Pollack, A. D,. Raymond, R. & Valliant, J. R. (1952). **Studies on phagocytosis. Determination of blood opsonin for brucella.**—*J. Bact.* **64,** 121-130. [Authors' summary slightly modified.] 2216

Factors influencing phagocytosis of *Br. suis,* strain PSIII, by normal dog blood leucocytes *in vitro* were investigated. Neutrophiles were more active than mononuclear or eosinophile leucocytes. Citrate, unlike heparin, inhibited phagocytosis. Formalin-killed organisms were phagocytosed to the same degree as living ones. Repeated washing of blood cells as frequently as 20 times in a modified Krebs solution containing 3% gelatin did not impair phagocytic activity. On the basis of these findings, a method was developed for titrating opsonin using cells and plasma of the same blood.

Lafenêtre, H. (1952). La prophylaxie des brucelloses en France. [**Prophylaxis of brucella infection in France.**]—*Rev. Méd. vét., Lyon et Toulouse.* **103,** Aug.-Sept. 496-510. 2217

A résumé of the brucellosis situation in animals in France and discussion on methods of eradication. Two vaccines prepared at Montpellier, strain B112 and a modified form of this are to be given extensive trials.

—G. V. Laugier.

Wolff, J. W. & Bohlander, H. (1952). **Bovine leptospirosis. A survey of the epidemiology and serology and an investigation on the possible occurrence in bovines in the Netherlands.**—*Docum. Med. geogr. trop.* **4,** 257-265. [In English. Authors' summary modified.] 2218

A discussion on the literature and an epidemiological review. The clin. picture of bovine leptospirosis may be produced by antigenically different types of leptospira.

The antigenic structure of Bernkopf's bovine strain, although in minor details different from a type strain of *L. grippo-typhosa,* closely resembles the general pattern of various strains in the *grippo-typhosa* group.

Screening of bovine sera in the Netherlands showed only few positive reactions, as compared with the results in other countries, mainly for *L. icterohaemorrhagiae* and *L. grippo-typhosa,* and for a bovine strain.

The authors outlined a scheme of possible chains of infection in bovine leptospirosis.

Donatien, A., Gayot, G. & Rampon, L. (1951). La leptospirose bovine en Algérie. [**Bovine leptospirosis in Algeria.**] — *Arch. Inst. Pasteur Algér.* **29,** 18-19. 2219

A description of a second case of bovine leptospirosis in Algeria, in a cow which had recovered from piroplasmosis after treatment.

[For previous report, see *V.B.* **22**, 3639.] The onset of leptospirosis was sudden and the cow died within 36 hours. The organisms were found P.M. in sections of liver and kidney.—E. G. White.

York, C. J. & Baker, J. A. (1953). **Vaccination for bovine leptospirosis.**—*Amer. J. vet. Res.* **14**, 5-8. 2220

The authors discussed recent work showing the importance of bovine leptospirosis in the U.S.A. They described a vaccine which they prepared from Cornell Strain 262 of *L. pomona* cultured in fertilized hen's eggs and inactivated either with formalin or by alternate freezing and thawing. Five ml. of the vaccine, injected s/c into calves, protected them completely against subsequent challenge inoculation with virulent *L. pomona* organisms.—A.S.

Monlux, W. S. (1948). **Leptospirosis. III. The clinical pathology of canine leptospirosis.**—*Cornell Vet.* **38**, 109-121. 2221

An account of the illness in 31 dogs affected with leptospirosis, with a brief analysis of data. In addition details were given of nine dogs that were infected artificially with four strains of *L. icterohaemorrhagiae* and four strains of *L. canicola*. Details were also given of the agglutination reaction obtained in these animals. Besides general clinical observations, examinations were made of routine factors relating to both red and white blood corpuscles and blood platelets. Chemical analyses were made for nitrogen, creatinine, inorganic phosphorus, blood sugar, calcium and chloride.

—I. W. Jennings.

Schneiderman, A., Greene, M. R., Schieler, L., McClure, L. E. & Dunn, M. S. (1953). **Nutrition of *Leptospira canicola*. III. Utilization of vitamins and amino acids.**—*Proc. Soc. exp. Biol., N.Y.* **82**, 53-56. [Authors' summary slightly modified.] 2222

It has been shown that the growth of *L. canicola* on a chemically defined medium lacking amino acids but supplemented with rabbit serum albumin is stimulated at certain levels of arginine, aspartic acid, glutamic acid or proline, but is inhibited by any one of 16 amino acids at some concentration. The rabbit albumin could not be replaced by a mixture of amino acids simulating the amino acid composition of the albumin as determined by microbiological assay. Thiamine was found to be the only vitamin essential for the growth of *L. canicola*. *L. canicola, L. pomona, L. ballum, L. sejroe,* and *L. icterohaemorrhagiae* could be subcultured on a simple medium containing only salts, thiamine, asparagine, and rabbit serum.

Mura, D. & Altieri, M. (1950). Sull'etiologia, la patogenesi e la profilassi della mastite gangrenosa delle pecore e delle capre. **[Aetiology, pathogenesis and prophylaxis of gangrenous mastitis of sheep and goats.]**—*Zooprofilassi.* **5**, 449-465. [Abst. from English summary.] 2223

An account of gangrenous mastitis of sheep and goats in Sardinia. Nocard's micrococcus and *Clostridium welchii* were present in 98% of cases, along with other micro-organisms. It is suggested that the simultaneous action of the micrococcus and *Cl. welchii* was mainly responsible for the disease.

Guillaumie, M. & Kréguer, A. (1951). Action de la chaleur sur les différents types de toxine perfringens. **[Action of heat on *Clostridium welchii* toxins.]**—*C. R. Soc. Biol., Paris.* **145**, 981-984. 2224

A study of the effects of heating at 70° and 100°C. on *Cl. welchii* toxin (types B, C. D, E, and F), with and without peptone. Toxicity was destroyed after 5 min. in 9% NaCl soln. at 70°C.; in the presence of peptone, however, 4–8 hours were needed.—G. Davies.

Gürtürk, S. (1951). Differenzierung der Typen der Clostridium welchii-Gruppe mit Hilfe des Haemagglutinationshemmungstestes. **[Differentiation of bacteria of the *Cl. welchii* group by the haemagglutination-inhibition test.]**—*Z. Hyg. InfektKr.* **133**, 573-580. 2225

A description of an H.I. test which can be used to distinguish the various types of *Cl. welchii* and to detect specific antibodies in the serum of affected animals.—E. G. White.

Katić, R. (1951). **[The effect of filtrates and cultures of *B. subtilis* on the antigenicity of tetanus toxin and toxoid.]**—*Acta vet., Belgrade.* **1**, 94-101. [In Serbian. German summary.] [Abst. from abst. in *Bull. Hyg., Lond.* **27**, 891-892. (1952).] 2226

B. subtilis filtrate was added to tetanus toxin and the mixture kept at 37°C for 24 hours. Injection of the mixture into g. pigs did not increase their resistance to subsequent challenge doses of tetanus toxin. Tetanus toxoid was not inactivated by the addition of *B. subtilis* filtrate, since rabbits injected with the treated toxoid developed antibody to the same titre as controls.

Nagórski, F. (1952). Próby leczenia zwierząt chorych na tężec podoponowym wprowadzaniem surowicy swoistej i anatoksyną. **[Experimental treatment of tetanus by submeningeal administration of specific serum and**

anatoxin.]—*Méd. vét., Varsovie.* **8,** 120-123. 2227

A note on the results of injection of tetanus antiserum into the subarachnoid space for the cure of tetanus in 13 horses and a dog, anatoxin being given s/c at the same time. Six of the horses and the dog recovered.

—J. R. Mitchell.

Vinzent, R. & Alloy, A. (1952). Avortement vibrionien de la brebis. Remarques sur la culture de *Vibrio foetus*. [**Vibrionic abortion in sheep. Culture of the organism.**]—*Rec. Méd. vét.* **128,** 541-543. 2228

A discussion on *V. fetus* infection in cattle in France, with mention of 3 cases of human infection in Normandy and of the isolation of the organism from a sheep foetus. The authors suggested that demonstration of the organism would be facilitated if heads of aborted foetuses were submitted for culture of cerebral material. They considered the media of choice to be those used for anaerobes.—Ian Newsam.

Webster, H. D. & Thorp, F., Jr. (1953). **A study of the pathology of embryonating chicken eggs inoculated with *Vibrio fetus*.**—*Amer. J. vet. Res.* **14,** 118-122. 2229

The authors propagated *V. fetus* through 23 serial passages in chick embryos and confirmed its pathogenicity for this host. Arteriolar lesions similar to those in the bovine foetal placenta developed in the chorioallantoic membranes. Glomerulitis also developed, illustrating the pathogenicity of *V. fetus* for embryonic vascular endothelial cells. The tissues and organs most generally affected by the organism were the chorioallantoic membrane, cutaneous tissues, liver, kidney, spleen, gizzard, and brain.—A.S.

Coppini, R. (1951). Tentativo riuscito di profilassi della pedaina degli ovini. [**Prevention of foot rot in sheep.**]—*Atti Soc. ital. Sci. vet.* **5,** 430-433. [English and French summaries.] 2230

C. carried out with good results a trial of the control of foot rot in large flocks of sheep in Central Italy, based on the work of Beveridge in Australia [*V.B.* **12,** p. 104]. It was considered that the results justified further trials on a larger scale with a view to application of the method on a national basis.—I. Martini.

Gordon, M. A., Bradley, E. G. & Grant, V. Q. (1952). **The influence of different types of corn meal agar upon chlamydospore production by *Candida albicans*.**—*J. Lab. clin. Med.* **40,** 316-320. 2231

An account of the use of 4 modifications of maize meal agar for the growth of *C. albicans*.—C.M.S.

Robinson, V. B., McVickar, D. L. & Peterson, J. C. (1951). **Some aspects of the epizoötiology of histoplasmosis in two Boxer breeding kennels.**—*J. Amer. vet. med. Ass.* **119,** 195-200. 2232

Eighteen deaths from proved *Histoplasma capsulatum* infection occurred in dogs from 2 kennels. Three bitches developed the disease soon after a visit, for mating, to one of the kennels. Adult, apparently healthy dogs may have been carriers of the infection. Two adult females developed the condition after caesarian section at full-term pregnancy, indicating possibly a relationship between lowered physical condition and increased susceptibility.

—Jas. G. O'Sullivan.

Furth, F. W., Coulter, M. P. & Howland, J. W. (1952). **Bacteriologic studies of the X-radiated dog.**—*Amer. J. Path.* **28,** 171-183. 2233

X-irradiation followed by treatment with aureomycin for 28 days caused an increase in the faecal coliform organisms, staphylococci and streptococci. X-irradiation alone or aureomycin alone caused a smaller increase in the faecal coliform organisms and staphylococci, but the number of faecal streptococci present was practically unaffected.

X-irradiation caused an increase in the number of positive blood cultures. This was prevented by the aureomycin.

The treatment with aureomycin caused the development of strains which were highly resistant to this drug.—E. A. Gibson.

Yudkin, J. (1953). **Origin of acquired drug resistance in bacteria.**—*Nature, Lond.* **171,** 541-546. 2234

Y. expounded a new theory, clonal variation with selection, to explain the mechanism by which micro-organisms acquire resistance to drugs. It is based on the assumption that a bacterial cell may give, on division, two cells with different and unequal resistance. This results in a clone of cells, the average resistance of which is that of the parent cell, but with a distribution of resistance of the members of the clone around that of the parent cell. All the essential features of acquired drug resistance can be accounted for by this new theory.

—A. Ackroyd.

Faggioli, G. (1952). Azione antibatterica di un analogo della vitamin K. [**Bactericidal activity of an analogue of vitamin K.**]—*G.*

Batt. Immun. **44**, 195-200. [English, French and German summaries.] 2235

Tests showed that *Staphylococcus aureus* and *Staph. albus* are particularly sensitive to the antibacterial action of vitamin K_5, but other bacteria such as *Bact. coli, Salmonella enteritidis* etc. are much less sensitive. The addition of penicillin increased the bactericidal action of vitamin K_5.—J. A. Nicholson.

Roth, W. (1950). Immun- und Oberflächenphagocytose bei bekapselten pathogenen Bakterien. [**Immune and surface phagocytosis of capsulated pathogenic bacteria.**]—*Schweiz. Z. Path. Bakt.* **13**, 1-14. [English, French and Italian summaries. English summary modified.] 2236

The tests made by Wood [*V.B.* **22**, 1027] on surface phagocytosis were repeated with pneumococcus, the Friedländer bacillus and the anthrax bacillus. In all cases definite surface phagocytosis was observed. The test for the presence of bacteriotropins in homologus sera gave the same titre whether performed *in vitro* or on rough surfaces. Since the phagocytosis due to bactriotropins was always considerably higher than the surface phagocytosis, it is questionable whether there is an additive effect of the bacteriotropins and the rough surface in the experiments in which the tests were performed in the presence of immune serum and a rough surface.

See also absts. **2299** (on the nature of viruses and bacteria); **2426** staining method for the organism of ovine and caprine contagious agalactia); **2427** (periodic acid-Schiff stain); **2434** (report, India); **2436** (report, Sweden); **2437** (book, microbiology).

DISEASES CAUSED BY PROTOZOAN PARASITES

Goodwin, L. G. & Unsworth, K. (1952). **The chemotherapeutic action of phenanthridine compounds. V. The effect of four new phenanthridine derivatives upon fly-transmitted *T. vivax* infections in cattle.**—*Brit. J. Pharmacol.* **7**, 581-590. 2237

Four new phenanthridine compounds were tested upon the acute stage of fly-transmitted *T. vivax* infections. The cattle were infected by a controlled exposure to *G. morsitans*. Groups of up to 4 animals were treated with each compound. Two of these compounds 150C47 (2:7-diamino-9-*p*-aminophenyl-10-methylphenanthridinium chloride) and 621-C47 (2:7-diamino-9-α-thienyl-10-methylphenanthridinium bromide) cured *T. vivax* infection at a dosage level of 1 mg./kg.—D. W. Jolly.

Goble, F. C. (1952). **Observations on experimental Chagas' disease in dogs.**—*Amer. J. trop. Med. Hyg.* **1**, 189-204. 2238

Using three strains of *T. cruzi* experimental Chagas' disease was studied in 60 dogs, of which some adults recovered spontaneously, but all untreated puppies died. The prepatent period varied with the strain used and was shorter following s/c than after i/p injection; it was similar in both sexes, but the parasitaemia was greater in males than in females. In untreated puppies death occurred from acute myocarditis 8–39 days after the appearance of trypanosomes in the blood stream. Pentaquine was the most successful curative drug used.
—M. L. Clarke.

del Ponte, E. (1952). Consideraciones sobre la epidemiologia de la leishmaniasis tegumentaria en la Argentina. [**Epidemiology of cutaneous *Leishmania* infection in Argentina.**]—*Bol. Ofic. sanit. pan-amer.* **32**, 223-231. 2239

A critical consideration of the factors concerned in the spread of *Leishmania* infection, with emphasis on the habits and preferred surroundings of the vector, *Phlebotomus*. The importance of the disease in the Argentine was discussed.—A.S.

Gagliardi, G. (1952). La sierologia nella tricomoniasi bovina con particolare riferimento alla reazione di fissazione del complemento. [**A complement-fixation test for trichomoniasis.**]—*Zooprofilassi.* **7**, 349-362. [English, French and Spanish summaries.] 2240

The c.f. test was carried out on 600 blood samples collected from cattle almost certainly affected by trichomoniasis. The test was stated to be reliable only in cows and only to a certain extent (50–70%).—I. Martini.

Wetzel, R. & Ditgens, K. (1951). Mucoagglutination und Trichomonadeninfektion beim Rind. [**Mucus-agglutination and trichomoniasis in cattle.**]—*Dtsch. tierärztl. Wschr.* **58**, 145-146. 2241

An account of the use of the mucus-agglutination test on German cattle. The authors considered the test valuable where large numbers of animals have to be examined for *Tr. foetus* infection, though they found that animals in oestrus or affected with pyometra did not respond to the test.—M. L. Clarke.

Mundt, W. (1953). Ein Beitrag zum Studium der Lebens- und Vermehrungsfähigkeit von Trichomonas foetus ausserhalb des Tierkörpers. [**Life and multiplication of *Tr. foetus* outside its host.**]—*Tierärztl. Umsch.* **8,** 73-77. 2242

M. claimed that *Tr. foetus* can multiply for up to 10 days in bovine faeces, for 5 days in liquid manure and straw, and for 3 days in river water, but is killed in half an hour by direct sunlight.—M. L. Clarke.

Feinberg, J. G. & Morgan, W. T. J. (1953). **The isolation of a specific substance and a glycogen-like polysaccharide from *Trichomonas foetus* (var. Manley).**—*Brit. J. exp. Path.* **34,** 104-118. 2243

The authors obtained from *Tr. foetus* (var. Manley) by extraction with diethylene glycol a specific substance reacting with antiserum to this organism and eliciting a skin reaction in infected or immunized animals. It reacted little with antiserum to *Tr. foetus* (var. Belfast). The substance was extensively fractionated and shown to consist of a polysaccharide including at least 5 elements, and 10 amino-acids. It did not itself induce antibody formation and may therefore have been a hapten. A second, antigenically inert, substance isolated from *Tr. foetus* was a polysaccharide resembling glycogen.

Robertson, J. G. (1953). **An outbreak of ovine coccidiosis.** — *Vet. Rec.* **65,** 183-186. [Author's summary modified.] 2244

An account was given of an outbreak of clinical coccidiosis in 400 lambs, among which the morbidity rate was 15% and one lamb died. Symptoms and P.M. picture were of an afebrile enteritis without true dysentery. Clinical cases had very high faecal oocyst counts, but some "carriers" and convalescent animals not showing symptoms also had high counts exceeding those of some of the milder clinical cases. It was concluded tentatively that the presence or absence of faecal oocyst counts of 100,000 per g. in conjunction with clinical observation provide valuable diagnosistic evidence of coccidiosis in a flock. Mass infection initiated by a high carrier rate among the ewes at lambing and facilitated by indifferent husbandry and harsh weather as precipitating factors were important in the aetiology of the outbreak. Appropriate prophylactic measures were discussed.

Lotze, J. C. (1953). **Life history of the coccidian parasite, *Eimeria arloingi*, in domestic sheep.** — *Amer. J. vet. Res.* **14,** 86-95. [Author's summary modified.] 2245

A study was made on the endogenous phase of the life history of the coccidian parasite, *Eimeria arloingi* in domestic sheep raised free from parasites. The small intestine was the seat of infection. The time from inoculation to the shedding of the first oocyst was 20 days. Schizonts developed in the central lacteals of the villi, utilizing endothial cells as host cells. Mature merozoites were produced about 13 days after inoculation. There was no evidence that the merozoites produced another generation of schizonts. The sexual stages utilized epithelial cells for their development, and tended to invade groups of neighbouring cells, often those over one or more villi, which became so enlarged that they could be easily discerned with the naked eye.

Das, J., Rao, S. B. V. & Ramnani, D. R. (1952). **Studies on *Plasmodium gallinaceum* [in Indian fowls].**—*Indian Vet. J.* **29,** 14-26. 2246

The authors described the symptoms and the gross and microscopic lesions. Paludrine 0·075 g. per kg. body wt. given orally for 3 days was effective. Birds which recovered naturally were immune while treated birds were not immune.—D. R. Uppal.

Jacobs, B. (1953). **Some blood parasitic protozoa of small wild mammals in England.**—*Trans. R. Soc. trop. Med. Hyg.* **47,** 10-11. 2247

Babesia ninense and a piroplasm resembling *Babesia crocidura* were demonstrated in *Sorex araneus castaneus* (the common shrew). The organism from *Clethrionomys glareolus britannicus* (the bank vole) resembled *Smithia microti*, and the one from *Apodemus sylvaticus* (field mouse) was probably *Nuttallia muris*.

Hepatozöon microti was seen in the liver of the field vole (*Microtus agrestis hirtus*) and the lungs of the bank vole.

—Jas. G. O'Sullivan.

Chamberlain, D. M., Docton, F. L. & Cole, C. R. (1953). **Toxoplasmosis. II. Intrauterine infection in dogs, premature birth and presence of organisms in milk.**—*Proc. Soc. exp. Biol., N.Y.* **82,** 198-200. [Authors' summary copied *verbatim*.] 2248

Toxoplasma of human, canine, and porcine origin was pathogenic for pregnant bitches and caused abortion or premature parturition. The organism was isolated from 23 of 28 pups born of 5 bitches. *In utero* transmission of toxoplasms was demonstrated by isolation of toxo-

plasmosis from each of 8 pups (born of 4 bitches) which were collected aseptically and sacrificed at the time they emerged from the birth canal. Isolation of organisms from the placenta and allantoic fluid was further evidence of *in utero* transmission. A mammary gland emulsion from one bitch and samples of milk collected aseptically from 4 lactating infected bitches each revealed toxoplasma.

Cassamagnaghi, A. (1952). La toxoplasmosis. Su incorporación en la patología Uruguaya. Reconocimiento de dos cepas en nuestras aves domésticas. Su trasmisión y carácter infecciosa para los mamíferos. [**Toxoplasmosis in birds in Uruguay.**]—*Bol. Direcc. Ganad., Montevideo*. **33**, 34-38. **2249**

Toxoplasmosis exists in Uruguay in enzootic form in young canaries and pigeons from which it is artificially transmissible to rabbits. These two avian hosts must therefore be regarded as potential sources of infection for man and animals.—I. W. Jennings.

See also abst. **2431** (report, Canada).

DISEASES CAUSED BY VIRUSES AND RICKETTSIA

Ramon, G. (1952). **Foot-and-mouth disease. Epidemiologic, virologic and immunologic considerations. Lessons drawn from a large epizootic.**—*Bull. Off. int. Epiz. II.* **37**, 625-661. [In English.] **2250**

A review of the epizootic which started in 1951, with details of its spread and extent in the different countries. Variability of the virus and the consequent failure of vaccination were discussed. R. urged the adoption of control measures recommended by the Office International des Epizooties, namely, control of imports, notification of outbreak, slaughter of infected animals, disinfection and restriction of livestock movement.—R.M.

Anon. (1952). La fièvre aphteuse. [**Foot and mouth disease.**]—*Pr. méd.* **60**, 539. **2251**

A brief discussion with emphasis on the disease in man.—G. V. Laugier.

Brooksby, J. B. (1952). **The technique of complement-fixation in foot-and-mouth disease research.**—*A.R.C. Rep. Ser.* No. 12. pp. 39. London: H.M. Stat. Off. 6s. 6d. **2252**

Varying doses of complement are used and the degree of haemolysis is estimated by a photo-electric absorptiometer; the readings obtained are transformed to probit values and expressed as a straight-line graph from which the dose of complement causing 50% haemolysis may be derived; Veronal buffer fortified with magnesium ions is used as a diluent. Satisfactory results are obtained by a period of 30 min. for fixation; overnight fixation gives higher titres though the specificity is reduced. The nature of the investigation would determine which is the more suitable period.

Crude antigens are prepared by grinding infected epithelium and the complement fixing properties of these antigens are usually more stable than their infectivity. Inhibition of complement fixation due to antigen excess was rarely found.

The antisera are usually prepared in g. pigs and the experiments reported show that satisfactory antisera may be produced with ease. Complement-fixation tests demonstrate absolute specificity of antibodies for F. & M. disease relative to vesicular stomatitis. Specificity is not always absolute, however, between different types of F. & M. disease virus probably because of shared antigens.

The value and limitations of c.f. tests in the study of strain specificity and mixtures of strains was discussed and several protocols were given; a note was added on the correlation of specificity when studied by complement fixation, neutralization and vaccination.

—G. Fulton-Roberts.

Nagel, H. C. (1952). Das Verhalten des Maul- und Klauenseuchevirus in neugeborenen Laboratoriumstieren. [**Cultivation of foot and mouth disease virus in new-born laboratory animals.**]—*Zbl. Bakt. I.* (*Orig.*) **159**, 40-46. **2253**

An extension of the experiments reported by Skinner [*V.B.* **22**, 2456]. In addition, newborn rats, rabbits and kittens were found to be susceptible to this virus.—R.M.

Strozzi, P. (1952). Informaciones relacionadas a la vacuna antiaftosa preparada en el Perú. [**The preparation of foot and mouth disease vaccine in Peru.**]—*Rev. Med. vet., B. Aires.* **34**, 27-39. [English, French and Italian summaries.] **2254**

S. described the production of the trivalent vacine at the Instituto Nacional Antiaftoso of Lima by Waldmann-Schmidt's method.—R.M.

Hobohm, K. O., Forrest, G. E. & Petermann, H. G. (1952). Die chemische Analyse von Adsorbatvakzinen gegen Maul- und Klauen-

seuche. **[Chemical analysis of adsorbate vaccines against foot and mouth disease.]**—*Mh. prakt. Tierheilk.* **4,** 413-420. 2255

The authors described a chemical test designed to supplement serological tests, in the determination of variations from the original in the chemical structure of adsorbate vaccine. —I. W. Jennings.

Kodrnja, E. (1952). Vukovi i ostale zvijeri kao čuvaoci virusa bjesnoće i zatornici domaćih životinja. **[Wolves and other wild animals as a reservoir of the rabies virus and destroyers of domestic animals.]**—*Veterinaria, Sarajevo.* **1,** 687-702. [In Croat. Abst. from English summary.] 2256

A discussion of the control of rabies in Yugoslavia. Wolves and foxes form an important reservoir of the disease, and 47 people were infected directly by wolves in 1950. K. advocated a general campaign combining the vaccination of all dogs with the eradication of wolves throughout the country. In this second aspect of the plan co-operation with neighbouring countries would be essential, and he proposed that their help should be enlisted before beginning. Foxes, being less aggressive, are not so important as a source of infection.

Trumić, P., Ercegovac, D. & Turubatović, R. (1953). **[An epidemic of rabies in cattle in North Serbia in 1952.]**—*Vet. Glasn.* **7,** 4-7. [In Serbian. Abst. from French summary.] 2257

An outbreak of rabies occurred in autumn in cattle which had grazed on particular pastures during the summer. Sand dunes adjacent to these pastures harboured infected foxes which transmitted the disease to cattle.—R.M.

Reagan, R. L., Day, W. C., Harmon, M. P. & Brueckner, A. L. (1953). **Electron microscopic study of the virus of rabies.**—*Amer. J. vet. Res.* **14,** 111-112. [Authors' summary modified.] 2258

Studies with the electron microscope of the brains of hamsters infected with strain V308 rabies virus showed the virus to vary from 100 to 120 mμ in diam. Inclusion bodies could not be demonstrated in concentrated normal hamster brains subjected to the same procedure of concentration and examination. Concentrated virus-bearing hamster brain material, injected intracerebrally into normal hamsters, produced furious rabies, while corresponding material from normal hamster brains, similarly injected into hamsters, produced no evidence of rabies. The virus particles demonstrated resembled the internal structures previously seen in Negri bodies by electron microscopy.

Badiali, L. (1953). Sulla cerebro-neutralizzazione del virus rabbico secondo Kubes e Gallia. **[A rabies virus brain tissue neutralization test.]**—*Zooprofilassi.* **8,** 49-54 & 57. [English, French and Spanish summaries.] 2259

This test was developed by Kubes & Gallia [*V.B.* **14,** 2393] to control the efficacy of antirabies vaccine. Using their technique in two small experiments, B. obtained negative results.—R.M.

Mogabgab, W. J. & Horsfall, F. L., Jr. (1952). **Effect of sodium monofluoroacetate on the multiplication of influenza viruses, mumps virus, and pneumonia virus of mice (PVM).**—*J. exp. Med.* **96,** 531-548. 2260

Sodium fluoroacetate, given at a dosage of 3–4 mg./kg. in mice or 2 mg./kg. in chick embryos, after inoculation of small and large doses of virus, caused only a slight delay in multiplication and no effect on the maximal virus titres of influenza A and B virus, pneumonia virus of mice and mumps virus. The metabolic processes blocked by this compound are not essential for the intracellular multiplication of any of these viruses.—A. Ackroyd.

Schang, P. J., Pavé, S. & Larroux, S. (1952). Persistencia del virus de la viruela de los lechones. **[Viability of the virus of swine pox.]**—*Gac. vet., B. Aires.* **14,** 169-170. 2261

It was suggested that, in the absence of susceptible swine, *Haematopinus suis* is able to carry the virus of swine pox for at least a year. —I. W. Jennings.

Duran-Reynals, F. (1952). **Studies on the combined effects of fowl pox virus and methylcholanthrene in chickens.**—*Ann. N.Y. Acad. Sci.* **54,** 977-991. [Author's summary modified.] 2262

Painting the skin of chicks, fowls and pigeons with methylcholanthrene activated latent fowl pox infections. Typical acute lesions from which the pox virus could be recovered by passage appeared on the painted skin. Virus was also recovered P.M., from the viscera. Papillomas, angiomas, and squamous cell carcinomas developed in skin after continued treatment. The cancers that developed early proved to be of low malignancy, but those that appeared many months after starting the treatment induced widespread metastases and could be transplanted to other hosts.

There appeared to be a gradual microscopic transition from the stimulated epithelium and the very vascularized chorion of the acute pox lesions to squamous cell carcinomas and

angiomas, respectively. Fowl pox virus was recovered often from the neoplastic lesions, but the frequency in detecting the virus from successively-appearing lesions in the same host was conditioned by a variety of factors.

Whether the activation of fowl pox virus is directly involved in the process of carcinogenesis, or whether it is an event concomitant to carcinogenesis which may affect, however, the morphology, and conceivably the biology, of cancers and other lesions, was discussed.

FENNER, F. (1953). **Classification of myxoma and fibroma viruses.**—*Nature, Lond.* **171,** 562-563. [Author's summary modified.] **2263**

F. considered that the points of resemblance between myxoma virus and accepted members of the pox group of viruses were so numerous, and the detailed morphological similarities of the elementary bodies so great, that the classification of myxoma virus within the pox group was fully justified. Of all the characters examined, myxoma and fibroma virus differ from viruses like fowl pox and vaccinia only in their sensitivity to ethyl ether. It would appear more logical to doubt the absolute importance of this property than to base the exclusion of myxoma virus from the pox group upon it.

KILHAM, L., HERMAN, C. M. & FISHER, E. R. (1953). **Naturally occurring fibromas of grey squirrels related to Shope's rabbit fibroma.**—*Proc. Soc. exp. Biol., N.Y.* **82,** 298-301. [Authors' summary copied *verbatim.*] **2264**

Six grey squirrels collected in Maryland were found to have multiple small cutaneous nodules which histologically resembled Shope's rabbit fibroma. The squirrel fibroma was carried through 2 intracutaneous passages in grey squirrels, 4 consecutive passages in woodchucks, and from woodchucks for 2 passages in domestic rabbits. Cross-neutralization tests provided immunological evidence that the squirrel and Shope fibromas are related.

DONNELLEY, M. & FRENCH, E. L. (1953). **Murray Valley encephalitis: complement-fixation techniques.**—*Med. J. Aust.* Jan. 24th. 93-95. [Authors' summary modified.] **2265**

A technique was described for the estimation of complement-fixing antibody to Murray Valley encephalitis virus.

The antigen was a simple saline extract of infected chorio-allantoic membranes, and was satisfactory for human and mammalian serum titrations.

The ice-box modification of a previously described volume-dropping technique provided a simple c.f. test giving highly sensitive and specific results. The test detected complement-fixing antibody in human, horse, dog, fox, and opossum sera. Sheep and cattle sera tested gave negative results.

HIRTZ, J. (1952). Étude électrophorétique du sérum de chevaux infectés expérimentalement d'anémie infectieuse. [**Electrophoretic study of the serum of horses infected experimentally with equine infectious anaemia.**] — *Rev. Immunol.* **16,** 397-405. **2266**

H. inoculated 4 horses with the virus of E.I.A. and determined the constitution of the protein fraction of the blood serum at intervals during the development of the infection. Electrophoretic analysis revealed no appreciable change in the albumin-globulin fraction of the protein, a finding which H. considered sufficient to explain the failure of previous attempts at serological diagnosis. From the constancy of composition of the serum throughout the experiment he concluded that electrophoretic analysis could not be used in the diagnosis of the disease. —A.S.

I. DOLL, E. R., MCCOLLUM, W. H., WALLACE, M. E., BRYANS, J. T. & RICHARDS, M. G. (1953). **Complement-fixation reactions in equine virus abortion.**—*Amer. J. vet. Res.* **14,** 40-45. **2267**

II. DOLL, E. R., WALLACE, M. E., BRYANS, J. T. & RICHARDS, M. G. (1953). **Complement-fixation antibody response following administration of equine virus abortion vaccine.**—*Ibid.* 46-48. [Authors' summaries modified.] **2268**

I. Procedures were given for a simplified direct c.f. test for equine virus abortion with data concerning the c.f. reactions of naturally infected mares following the abortion of virus-infected foetuses, and of mares following i/v inoculation with infective tissue suspensions.

Application of the c.f. test to the diagnosis of virus abortion and the interpretation of an immune state of the mare were discussed.

II. A tissue vaccine prepared from lungs of virus-infected equine foetuses stimulated the production of c.f. antibody in vaccinated mares. Stronger antibody response resulted from 5·0-ml. doses s/c than from 1·0- and 0·5-ml. doses i/d. The relation of c.f. antibody to immunity against equine virus abortion has not been determined.

MENGES, R. W., HARSHFIELD, G. S. & WENNER, H. A. (1953). **Sporadic bovine en-**

cephalomyelitis. Studies on pathogenesis and etiology of the disease.—*J. Amer. vet. med. Ass.* 122, 294-299. [Authors' summary modified.] 2269

Sporadic bovine encephalomyelitis is a specific and definite disease syndrome of cattle. Calves less than a year of age are more susceptible to severe attacks than are older cattle. The disease is apparently more common in the mid-western States of the U.S.A. but it may have occurred elsewhere as sporadic cases without being recognized.

Clinical and pathological observations indicate that the infectious agent primarily attacks mesenchymal tissues, among which the vascular tree and serous membranes bear the brunt of the attack. The encephalomyelitis is not primary but arises as an incident in a widespread invasion of mesenchymal tissues by the virus.

Minute elementary bodies may be found in tissues and exudates obtained from carcasses of cattle dead from the disease. Tissues and exudates obtained from infected cattle produce experimentally infection in g. pigs and in the yolk sac of embryonating eggs. Elementary bodies can then be demonstrated in the peritoneal exudate of the g. pigs and in the yolk sac of the embryonating eggs.

The appearance of specific antibodies, in experimental inoculated calves provides evidence that the agent is related to the disease in cattle. Physical and serological characteristics indicate that bovine encephalomyelitis virus is antigenically related to the psittacosis-lymphogranuloma group of viruses.

Oláh, P. & Elek, P. (1953). **Immunisation against the contagious pustular dermatitis (sore mouth) of sheep.**—*Acta vet. hung.* 3, 35-53. [In English; Russian summary.] 2270

In Hungary the morbidity of this disease averaged 11%; 74% of affected sheep were under 4 months old and 37% were under 4 weeks old. An average of 6·5% of affected sheep died.

A live vaccine applied by scarification provided immunity after 10 days which lasted a year. Lambs a few days old were successfully inoculated, but the immunity lasted for 6 months only. For sterilizing vaccine required for immediate use penicillin and streptomycin were used; 0·5% phenol was used for sterilizing stored vaccine. A dead vaccine was prepared by the inactivation of virus by formalin and adsorption on aluminium hydroxide, but production of this was uneconomical. Serum from convalescent and hyperimmunized sheep gave no protection to sheep simultaneously infected by scarification.—R.M.

Englert, H. K. (1953). Enzootische Schweinepest beim Schwarzwild im Odenwald. **[Swine fever in wild pigs in South-West Germany.]**—*Tierärztl. Umsch.* 8, 124-127. 2271

During an outbreak of swine fever in Odenwald 96 wild pigs died. P.M. examination revealed the typical lesions. In addition, in 88% of cases non-purulent lymphocytic encephalitis with vascular and perivascular cell infiltration was present.—R.M.

Englert, H. K. (1953). Beitrag zum pathologisch-anatomischen Bilde der Virus-Schweinepest. **[Pathology of swine fever.]**—*Berl. Münch. tierärztl. Wschr.* 66, 91-92. 2272

An outbreak was characterized by nervous symptoms (incoordination, paresis, coma). Apart from the typical lesions, degenerative changes were present in the heart which gave the appearance of "tiger heart".—R.M.

Bamberger, K. & Biró, E. (1951). Versuche zur Züchtung des Schweinepestvirus im bebrüteten Ei. **[Attempts to cultivate the swine fever virus on chick embryos.]**—*Acta vet. hung.* 1, 287-295. [In German. Russian summary.] 2273

The authors failed to maintain the virus of swine fever for more than 2 passages by inoculation into the chorio-allantoic membrane and into the blood stream of chick embryos. From the lesions in the embryos and membranes, apparently caused by the virus, they concluded that although the chick embryo is not a very favourable medium, it is not an unsuitable one. They suggested extension of these experiments by using several strains and material containing the virus in higher concentration.

—J. R. Hudson.

D'Apice, M. & Penha, A. M. (1952). Experiencias de sero-vacunación simultánea con vacuna de cristal-violeta por vía intradérmica. **[Swine fever immunization using serum simultaneously with intradermal crystal violet vaccine.]**—*Rev. Med. vet., B. Aires.* 34, 1-7. [English summary.] 2274

Immunity was obtained by the simultaneous injection of 10, 20 or 30 ml. of hyperimmune serum i/m and 1 ml. of crystal violet vaccine i/d. Immunity was present 5 days afterwards, and lasted for at least 60 days. The method was recommended for use in herds already infected. It was important for the crystal violet vaccine to be injected i/d, because i/m injection was ineffective.—R.M.

Conceicão, J. M. (1949). Estudo das zoonoses porcinas de Angola. Primeiro relatório. A zoonose porcina africana de virus filtrável. [**African swine fever in Angola.**]—*Pecuária.* **1,** pp. 217-245. [English summary.] 2275

A general account of the epidemiology and pathology of outbreaks of African swine fever in Angola. [The author appears to use "zoonosis" as a term for an infective disease of animals and not as a disease common to animals and man.—Ed. *V.B.*]—A.S.

Patočka, P., Kubelka, V. & Slavík, K. (1951). O některých biologických vlastnostech viru encephalomyelitis enzootica suis (Těšínská choroba. [**Some biological properties of the virus of encephalomyelitis enzootica suis (Teschen disease.)**] — *Věstn. čsl. Akad. Zeměd.* **25,** 461-475. 2276

Cultivation of the virus of porcine encephalomyelitis on chick embryos and experimental transmission to animals other than pigs, failed. A 10% spinal cord suspension was inactivated by exposure for 20 min. to a temp. of 65°C., or at 50°C. after partial purification with protamine sulphate. A 0·5% chloramine soln. inactivated similar virus material in 15–30 min., but partial purification with protamine sulphate reduced this time to about 5 min.

The virus remained active in environments from pH 2·5–13. A pH of 8–11 appeared to increase its virulence. Ether had practically no effect on the virus.

Partial purification was also achieved by acid precipitation with either methanol or acetone at temperatures lower than 0°C.

It was stated that in general the virus of Teschen disease resembles the virus of human poliomyelitis rather than those of the arthropod-borne encephalitides.—E.G.

Dinter, Z. (1953). Über Schweineinfluenza, Ferkelgrippe und infektiöse Pneumonie der Schweine. [**Swine influenza (Shope), "Ferkelgrippe" and virus pneumonia of swine.**]—*Berl. Münch. tierärztl. Wschr.* **66,** 67-70. 2277

The cause of influenza-like disease in pigs in Sweden was a pneumotropic virus, similar in size to viruses of the influenza group. This virus gave rise to pneumonitis in intranasally infected pigs; this usually developed into broncho-pneumonia of long standing. Bacteria were not involved in this process. Virus was recovered from the lungs weeks or months after infection. It did not grow on hen's eggs. Attempts at immunizing pigs against the virus failed.—R.M.

Palyusik, M. (1953). Untersuchungen über die Ätiologie der enzootischen Ferkelpneumonie. [**The aetiology of enzootic pneumonia of pigs.**]—*Acta vet. hung.* **3,** 63-73. [In German. Russian summary.] 2278

Eighty-two lungs and 57 throat swabs from swine were examined. A virus obtained from them grew in chick embryos and did not agglutinate fowl r.b.c. Haemagglutination tests, applied to 234 sera from pigs affected with, or recovered from, pneumonia, were in all cases negative. The disease was reproduced by the intranasal infection of pigslets with bacteria-free lung emulsions.

P. concluded that enzootic pneumonia in Hungary is caused by a non-haemagglutinating virus in conjunction with unfavourable hygienic conditions.—R.M.

Bay, W. W., Doyle, L. P. & Hutchings, L. M. (1952). **Some properties of the causative agent of transmissible gastroenteritis in swine.**—*Amer. J. vet. Res.* **13,** 318-321. [Authors' summary modified.] 2279

The causative agent of transmissible gastroenteritis remained infective for young pigs after 3 days' drying at 67° to 70°F. Supernatant fluid from centrifuged ground gastro-intestinal tract containing 0·05% formalin was not infective.

Ground gastro-intestinal tract produced disease after being stored for 3½ years at −28°C. Centrifugation of filtrates at 15,000–18,000 r.p.m. for 30–60 min. apparently concentrated the causative agent to some extent.

No host except swine has been found for the causative agent of transmissible gastroenteritis. Under the conditions of this study, none of the therapeutic agents used was of any value in treatment.

Corvazier, R. & Lasfargues, E. (1952). La conglutination: méthode de détection du virus de Carré. [**The conglutination test in diagnosis of canine distemper.**]—*C. R. Soc. Biol., Paris.* **146,** 676-678. 2280

Bovine serum contains conglutinin, thermostable at 56°F., which, in the presence of free complement, agglomerates r.b.c. A series of tests shows that the virus of canine distemper reacts with immune serum, using up the free complement and preventing the agglomeration of the r.b.c. This principle can be used to determine the presence of the virus in culture media and of antibodies in immune sera.

—B. G. Clarke.

Goret, P., Martin, L.-A. & Joubert, L. (1952). Essais d'infection et d'immunisation

du furet par le virus de Carré adapté au lapin. **[Infection of the ferret with rabbit-passaged distemper virus.]**—*Bull. Acad. vét. Fr.* **25,** 399-404. 2281

The authors studied the decline in pathogenicity for the ferret of rabbit-passaged distemper virus. With single i/p injections the virus proved virulent to the 9th passage, finally losing its pathogenicity at the 13th passage; however, when ferrets were inoculated 3 times at 2-day intervals with adapted virus in its 23rd passage they all died within 15 days of the first inoculation. To test the immunizing properties of the adapted virus after the 13th passage, ferrets were inoculated with it s/c at 7, 10 or 11 day intervals, but they died more quickly than the controls when challenged with virulent distemper virus.—A.S.

Martin, L.-A. (1953). Conservation sur les rongeurs de laboratoire du virus de Carré adapté ou non au lapin. **[Passage of the distemper virus in white mice and gerbils.]**—*Ann. Inst. Pasteur.* **84,** 478-481. 2282

Cross-immunity experiments with rabbits appeared to show a close similarity between the viruses of distemper and poliomyelitis and led M. to experiment with the latter in gerbils.

Having already demonstrated the persistence of poliomyelitis virus in inoculated gerbils and the transmission of infection from dam to offspring he thought it probable that similar results could be obtained with distemper virus. A pair of gerbils were inoculated, and the virus was recovered from the male at its death 11 months later, and similarly from the female 32 months later, as well as from their offspring, which were not inoculated.

Other experiments showed the persistence of distemper virus in white mice.—A.S.

Ribelin, W. E. (1953). **The incidence of distemper in canine encephalitis cases.**—*Amer. J. vet. Res.* **14,** 96-104. [Author's summary modified.] 2283

Of 66 cases submitted by veterinarians as representing canine encephalitis, 56 were shown microscopically to be true cases of the disease.

Histological examination for distemper inclusions, ferret inoculation, and neutralization tests showed 46 (82·1%) of the 56 cases to be related to canine distemper.

Forty-three of the distemper cases could be recognized by the presence of characteristic distemper inclusions and 35 of them contained neuroglial or ependymal inclusions in the c.n.s. The use of these inclusions in the c.n.s. was recommended as an aid to the diagnosis of distemper encephalitis. Neuronal inclusions occurred in 7 of the cases but their occurrence in other disease conditions made them unsuitable for distemper diagnosis.

The lesions of distemper encephalitis were characteristically a rarefaction of the white matter of the dorsal and lateral pons and medulla, cerebellar peduncles, and deep cerebellar white matter. The midbrain and less often anterior brain stem, corpus striatum, motor cortex, and spinal cord were also affected. In affected areas, astrocystic gliosis, characteristic inclusions and, less often, true inflammatory changes were seen.

Serum samples from the cases of encephalitis not caused by distemper were negative for neutralizing antibodies against western equine encephalomyelitis, St. Louis encephalitis, and lymphocytic choriomeningitis.

Schindler, R. (1952). Serologische Untersuchungen über die Hepatitis contagiosa canis (HCC). **[Serology in canine virus hepatitis.]**—*Mh. prakt. Tierheilk.* **4,** 481-486. 2284

Reliable differentiation between canine virus hepatitis and distemper was obtained by means of the c.f. test using extracts of organs, since it was not possible to detect distemper antibodies in serum by this test.—R.M.

Goret, P., Martin, L. A. & Joubert, L. (1952). Pouvoir pathogène pour le lapin du virus de l'hepatite contagieuse du chien (maladie de Rubarth). **[Susceptibility of the rabbit to the virus of canine hepatitis.]**—*Bull. Acad. vét. Fr.* **25,** 393-398. 2285

It was claimed that small numbers of rabbits inoculated with the virus of canine contagious hepatitis were easily infected, and that the symptoms observed closely resembled those seen following the inoculation of rabbits with the canine distemper and the poliomyelitis viruses previously reported. The authors speculated on the possibility of a cross immunity amongst these viruses in the rabbit.

—B. G. Clarke.

Goret, P., Lucam, F., Joubert, L., Flachat, C. & Henry, R. (1952). Remarques sur la sensibilité du furet au virus de l'hépatite contagieuse du chien. **[The susceptibility of the ferret to canine hepatitis virus.]**—*C. R. Soc. Biol., Paris.* **146,** 1201-1203. 2286

The reaction of ferrets to inoculation with the virus of canine hepatitis varies according to breed, climate, and the rearing conditions. Animals bred in France are normally receptive to the virus, while those from Britain have so far proved resistant. French ferrets, however, become resistant during autumn and early

winter, a phenomenon considered to be related to their state of semi-hibernation at that time. It is known that the metabolic state of the adrenal cortex is important in determining resistance to disease.

A condition of hypersensitivity was seen in animals subjected to repeated inoculations. —A.S.

McKercher, D. G. (1953). **Feline pneumonitis. II. The effect of antibiotics on the experimental infection.**—*Amer J. vet. Res.* **14,** 105-110. [Author's summary copied *verbatim.*] 2287

Aureomycin and terramycin were each found to be effective in the treatment of kittens experimentally infected with the virus of feline pneumonitis. However, virus was still present in the respiratory passages in some cases following treatment. Chloromycetin and penicillin were of questionable or slight value in this infection, whereas streptomycin proved entirely ineffective.

Parallel studies conducted in mouse lung and in chicken embryo yolk sac failed to reveal any significant host effect on the action of the drugs used in this study against the virus of feline pneumonitis.

Kutleša, I. (1952). Prilog poznavanju i dijagnostici atipične kuge peradi. **[Diagnosis of Newcastle disease.]**—*Veterinaria, Sarajevo.* **1,** 762-776. [Abst. from English summary.] 2288

An outbreak of N.D. in chickens was characterized by low mortality and encephalitis without respiratory symptoms. P.M. examination revealed disseminated encephalomyelitis, but there were no visceral lesions. Healthy birds inoculated with the strain isolated showed no symptoms, but developed an immunity to virulent infection which lasted for a year. Neutralizing and H.I. antibodies were present in recovered and experimentally infected birds.

K. concluded that the strain of virus was one naturally attenuated, possibily by passage through ducks.—R.M.

Ishii, S. & Kobayashi, K. (1952). **[Haematology of Newcastle disease of chickens.]**—*24th Rep. Govt. exp. Sta. Anim. Hyg., Tokyo,* 1952. pp. 15-22. [In Japanese. English summary.] 2289

In fowls inoculated with N.D. virus, a slight anaemia and remarkable temporary leucocytosis were seen during the febrile attack. There were marked increase of pseudo-eosinophiles and decrease of lymphocytes 2 days after injection.

Monocytosis usually occurred after the febrile attack or after recovery. No change in the numbers of eosinophiles and basophiles occurred. Similar haematological changes were seen in the fowls which did not develop symptoms.—Kogi Saito.

Mochizuki, H., Sugawa, Y. & Miyaira, K. (1952). **[Pathological studies on Newcastle disease in Saitama Prefecture in 1951.]**—*24th Rep. Govt. exp. Sta. Anim. Hyg., Tokyo,* 1952. pp. 23-28. [In Japanese. English summary.] 2290

Absence of haemorrhage of the intestinal tract was noticeable in an outbreak of Newcastle disease in Saitama Prefecture in 1951. Diffuse non-purulent meningoencephalitis, bronchial and intestinal catarrh, atrophy and hyaline degeneration of the splenic follicles, and activity of the reticulo-endothelial system of the spleen and liver were observed.—Kogi Saito.

Thompson, C. H., Jr. & Osteen, O. L. (1952). **Immunological and pathological findings on a highly virulent strain of Newcastle disease virus from Mexico.**—*Amer. J. vet. Res.* **13,** 407-416. [Authors' summary slightly modified.] 2291

The Queretaro Newcastle disease virus is much more virulent than any strain of N.D.V. which has been observed in the U.S.A., except the Asiatic strain of the virus which was introduced into California in 1950 and immediately eradicated. The only means discovered for differentiating the Queretaro N.D.V. from the milder forms of the disease were pathogenicity tests in significant numbers of susceptible fowls.

Birds of different ages, immunized with commercial Newcastle disease vaccine (live virus, wing-web administered), survived challenge by inoculation of the virulent Mexican virus, without manifesting any evidence of illness. An experimental crystal-violet Newcastle disease vaccine afforded 65% protection against this same virulent virus.

On the basis of the tests conducted, another Mexican strain, the Ixtapalapa N.D.V. appeared very similar to the California strain 11914 N.D.V.

Medgyesi, G. (1951). **[Purification of the Newcastle disease virus by use of a thermodiffusion apparatus.]**—*Acta vet. hung.* **1,** 305-311. [In Russian. German summary.] 2292

M. used a modified Ernst apparatus to separate the components in an allantoic fluid containing N.D.V. in order to purify the latter for vaccination purposes. He obtained a double concentration of virus, proved by titration, but in his opinion greater concentrations are possible.—F.A.A.

PLACIDI, L., SANTUCCI, J. & VERGE, J. (1952). Essais d'obtention chez la chèvre d'un sérum contre la maladie Newcastle. **[Goats used for the production of Newcastle disease serum.]** —*C. R. Acad. Sci., Paris.* **234,** 484-486. 2293

Chickens inoculated with 1–2 ml. of serum from goats which had received Newcastle disease virus died in 8–10 days after challenge with virulent Newcastle disease virus whereas controls died in 6 days.—D. LUKE.

BODON, L., ROJTI, M. & SZENT-IVÁNYI, M. (1952). **On the titration of the Newcastle disease antiserum.**—*Acta vet. hung.* **2,** 343-353. [In English. Russian summary.] 2294

The authors investigated the correlation between the haemagglutination-inhibition (H.I.) titre of serum of hyperimmune hens used for serum production and the protection value of the serum for day-old chicks. Their results indicated that a direct relationship exists, but that serum with an H.I. titre below 1:100 was non-protective.—F. T. W. JORDAN.

GUALANDI, G. L. (1952). La vaccinazione d'urgenza dei polli sani in pollai infetti da pseudo peste (Newcastle-disease). **[Immunization against Newcastle disease in infected and non-infected flocks.]**—*Arch. vet. Ital.* **3,** 425-431. [English, French, German and Spanish summaries.] 2295

Chickens were immune to pathogenic N.D.V. 3 days after inoculation with an attenuated live virus (Hertfordshire strain), owing to the interference phenomenon. When this vaccine was used on infected farms, immunity was not so rapidly established, and birds continued to die until 6–14 days after vaccination.

—R.M.

MARMION, B. P., STOKER, M. G. P., MCCOY, J. H., MALLOCH, R. A. & MOORE, B. (1953). **Q fever in Great Britain. An analysis of 69 sporadic cases, with a study of the prevalence of infection in humans and cows.**—*Lancet.* **264,** 503-510. [Authors' summary modified.] 2296

Excluding outbreaks, 69 sporadic cases of Q fever have been identified in Britain since the disease was first discovered there in 1948; 58 of these had typical clinical attacks usually resembling atypical pneumonia and 4 patients died during the infection.

32 patients were infected in Kent, and the remainder in places scattered over England and Wales, except for 3 who were infected abroad. Two-thirds of the patients gave a history of exposure to known sources of Q fever.

Of 4407 normal blood donors in England and Wales, 91 (2·13%) showed serological evidence of previous infection with Q fever. The rates in different areas varied from 2·96% in south-east England to 0·8% in East Anglia. This suggests that the cases actually diagnosed represent only a small proportion of the total.

Examination of the milk from 1031 herds of cattle showed that 8·2% of the herds in Kent were excreting *R. burneti* in the milk, compared with 2·7% in Devon and 0·85% in East Anglia.

The prevalence, distribution, and importance of Q fever in Britain, both in man and animals, were discussed in the light of these findings.

DERRICK, E. H. (1953). **The epidemiology of "Q" fever: a review.**—*Med. J. Aust.* Feb. 21st. 245-253. [Author's summary modified.] 2297

The importance of ticks as a reservoir of *R. burneti* is shown by the large number of species found naturally infected or capable of transmitting the infection experimentally, their widespread geographical distribution, the profuse multiplication of rickettsia within infected ticks and the failure to implicate any other group of arthropods. However, ticks have very little relation to human infection. The reservoir of infection represented by cows, sheep and goats is very important as a source of human infection. Infectivity resides particularly in placentas and milk.

Human case-to-case infection is on record, but is rare.

The association of "Q" fever patients with the animals from which they were presumably infected shows all degrees of closeness. Some patients were occupationally in immediate contact with animals; some resided near by. Infection was occasionally carried on clothing and very often in dust. Sometimes the association with animals was remote but traceable. Sometimes no association at all could be discovered.

The high resistance of *R. burneti* to heat and desiccation allows contaminated material to retain its infectivity for long periods during which it may be transported over a distance.

Inhalation is in most cases the mode of entry of *R. burneti* into man. A small but definite group of infections appears to be caused by the ingestion of raw milk. Occasional examples of other routes of infection may be found by searching the world literature.

The still unsolved problems of "Q" fever —particularly that of prevention—present a challenge to the investigator.

PRICE, W. H. (1953). **Interference phenomenon in animal infections with rickettsiae of Rocky Mountain spotted fever.**—*Proc. Soc. exp. Biol., N.Y.* **82**, 180-184. [Author's summary modified.] 2298

Eighty to 90% of the g. pigs injected i/p with a strain of *R. rickettsi* of low virulence were protected against a simultaneous injection of a highly virulent strain of spotted fever, or boutonneuse fever, provided the low virulent strain was given in about 10 to 30 times the concentration of the virulent strain. Infection with the rickettsia of Q fever, scrub typhus, endemic typhus, and epidemic typhus protected g. pigs against a virulent strain of spotted fever under the above conditions. Columbian ground squirrels, field mice (*Microtus*), and cottontail rabbits were infected by exposure to many *D. andersoni* containing a low virulent strain of Rocky Mountain spotted fever and a few *D. andersoni* containing a highly virulent strain. Uninfected ticks fed upon these animals were found to contain only the low virulent strain.

BOSHYAN, G. M. (1950). **[On the nature of viruses and bacteria. (With special reference to the organism of equine infectious anaemia).]**—*Veterinariya, Moscow.* **27**, No. 7. pp. 6-13. [In Russian.] 2299

B. suggested that viruses and bacteria are merely two forms of the same organism, growth occurring from the viral nucleoprotein, spontaneous origin being inadmissible. As primitive bodies, micro-organisms are unstable, polymorphic and labile and therefore dissociate or agglomerate easily, instead of dying when forced into a different environment and confronted by changed conditions. This adaptive process of building up from simple to complex forms and breaking down again is their means of survival, emphasized by B. by isolating living organisms from killed vaccines, biochemical preparations, sera, etc.; while dried bacterial cultures exhibit a high degree of resistance to bactericidal agents. Some stages acquire toxic properties and fuller knowledge of the whole process should enable better use to be made of vaccines.

According to B., immunization occurs by the breaking down of pathogenic bodies into particles which combine with the albumin in the host to form antibodies. B. cultured the organisms of foot and mouth disease, rabies, equine encephalomyelitis, swine fever, swine influenza, fowl plague, typhus and autumn encephalitis (human), claiming to have grown from each a bacterial form and a crystalline form, and reversed the process at all stages. Reversion to the original he believes occurs *in vivo* when any developed form becomes associated with its host again.

Some space is devoted to B's earlier findings on E.I.A. when he claimed to have discovered in the blood of infected horses nucleoproteins to which the virus particles adhered. From cultures producing bacterial forms B. made a diagnostic preparation, 2–3 drops in the eye causing suppuration in positive cases.

The conclusion was that a virus, being a particle of living matter, can develop by metabolism into more complex cells, acquiring various biological properties in the process, and is equally able to break down again; and that cells of bacteria, plants and animals are a product of further development.—F.A.A.

BELLER, K. (1949). Viren und Miasmen. **[Viruses and miasmas.]** pp. 80. Stuttgart: Franckh'sche Verlagshandlung W. Killer & Co. DM. 1.80. 2300

This little booklet, one of a series of popular publications on natural science, discusses the nature of viruses and Pettenkofer's theory on miasma in comprehensible style. There are 20 illustrations.—E.G.

See also abstr. **2157** (bacteriophage typing of *Staph. aureus* strains); **2334** (rabbit papilloma virus); **2434-2435** (reports, India); **2436** (report, Sweden).

IMMUNITY

BUXTON, A. (1952). **On the transference of bacterial antibodies from the hen to the chick.**—*J. gen. Microbiol.* **7**, 268-286. [Author's summary modified.] 2301

Agglutinins against *Salmonella pullorum* and *S. typhi* strain O 901 were induced in hens by i/v inoculation with killed suspensions and were transferred to the yolks of their eggs throughout a laying season of 280 days. The titres of yolks seldom rose above 160 even when those in the serum were 2560 and 5120, whereas the agglutinin levels of developing ovules from hens naturally infected with *S. pullorum* were about the same as in the related sera.

The sera and egg yolks of hens vaccinated with killed *S. pullorum* or infected with *S. gallinarum* contained a non-agglutinating antibody. The titres of non-agglutinating antibody in sera and in related egg yolks were about equal when hens were inoculated i/v; very little antibody was demonstrable in fresh egg yolks after i/m or s/c administration. Hens infected with

S. gallinarum per os yielded high yolk titres of agglutinating and non-agglutinating antibodies and these titres were maintained at a high level for 474 days. The results suggest that some of the antibody in egg yolk is formed in the follicular epithelium of the developing ovule or in the yolk material itself.

A passive immunity to *S. pullorum* was transferred from vaccinated hens to their chicks by the egg yolks and antibodies pass from yolk to embryonic serum from about the 11th day of incubation. The titres in the serum of the newly hatched chick are about the same as in the egg yolk before incubation and they decrease rapidly during the first 3 days and have almost disappeared by the 17th day; from the 8th day until the 17th day non-agglutinating antibodies alone are demonstrable. Antibodies are absorbed from the yolk through the vitelline and hepatic portal circulations and little or none is transferred by the yolk stalk and the chick's intestine.

BARR, M. & LLEWELLYN-JONES, M. (1953). **Some factors influencing the response of animals to immunisation with combined prophylactics.**—*Brit. J. exp. Path.* **34,** 12-22. 2302

The authors criticized the evidence in favour of immunization with two antigens simultaneously as inadequate, and re-examined the effects of this procedure in animals. Combinations both of two toxoids and of a toxoid with a vaccine were tested, and the response was found to vary with the total dose and with the relative proportions of the two components. When there was some pre-existing immunity to one component, there was a preferential response to this component and an inadequate one to the other. Since either synergism or interference may result according to the conditions, the general adoption of such procedures without further study was considered undesirable.

MOULLEC, J. & TÉTRY, A. (1952). Contribution à l'étude des antigènes érythrocytaires chez la poule. [**Study of erythrocyte antigens in the fowl.**]—*C. R. Acad. Sci., Paris.* **234,** 2560-2562. 2303

The antigen studied appeared to be associated with the sex chromosome, the homozygous male having a double dose of the antigen while the female had only a single dose.

—D. LUKE.

HUNT, S. & WALSH, R. J. (1952). **Haemolytic disease of newborn foals, with report of a case.**—*Aust. vet. J.* **28,** 159-163. 2304

A general account of the disease with a report of one fatal case.

See also absts. **2178** (tuberculin allergy); **2193-2195** (swine erysipelas); **2203-2211** (brucellosis); **2225** (differentiation of bacteria of the *Cl. welchii* group by the H.I. test); **2240** (c.f. test for trichomoniasis); **2241** (mucus-agglutination in trichomoniasis); **2250-2255** (F. & M. disease); **2265** (Murray Valley encephalitis c.f. techniques); **2266** (electrophoretic study of serum from horses with E.I.A.)); **2267-2268** (virus abortion in mares); **2270** (ovine pustular dermatitis); **2274** (swine fever); **2280** (conglutination test in distemper); **2284-2286** (canine virus hepatitis); **2288-2295** (Newcastle disease); **2298** (interference phenomenon in Rocky Mountain spotted fever).

PARASITES IN RELATION TO DISEASE [GENERAL]

SINCLAIR, L. R. & ENZIE, F. D. (1953). **Toluene against ascarids and bots in horses.**—*Amer. J. vet. Res.* **14,** 49-50. [Authors' summary modified.] 2305

Toluene removed all of 5 ascarids and 52% of 226 bots from 2 and 5 horses respectively, when administered in dosages of 10 to 20 ml. per hundred lb. after a fast of 24 hours. The drug was well tolerated in all respects, and no significant lesions were found at autopsy. These and other available data indicate that toluene warrants further investigation as an equine parasiticide, especially in ascariasis.

VOGELSANG, E. G. (1951). Los suinos (cimarrones) y la propagación de enfermedades parasitarias y bacterianas. [**Feral pigs in the spread of disease in animals in Venezuela.**]—*Rev. Med. vet., Caracas.* **10,** 133-135. 2306

The wild pigs of Venezuela are descended from domestic pigs and are usually found singly rather than in herds. Specimens have been captured which were parasitized by *Ascaris lumbricoides, Stephanurus dentatus* and *Sarcopsylla penetrans.* [No examples of the spread of infectious diseases by wild pigs in Venezuela were given.]—J. T. DONE.

See also abst. **2438** (book, ecology of animal parasites).

PARASITES IN RELATION TO DISEASE [ARTHROPODS]

FIEDLER, O. G. H. & DU TOIT, R. (1952). **The use of the modern synthetic insecticides in blowfly strike of sheep.**—*J. S. Afr. vet. med. Ass.* **23,** 225-233. 2307

From lab. work, it appears that the period of protection afforded by any larvicidal compound on sheep is dependent upon the combined effect of the ability to diffuse in wool

and the actual larvicidal value. The greater these two factors are, the longer is the resulting period of protection. The gamma isomer of benzene hexachloride, and dieldrin and aldrin (both chlorinated derivatives of naphthalene) are the larvicides of choice at present. Only the crutch needs to be treated, and this area should receive a high conc. of larvicide to afford max. length of protection.—G. B. S. Heath.

Hocking, B. & Richards, W. R. (1952). **Biology and control of Labrador black flies (Diptera: Simuliidae).**—*Bull. ent. Res.* 43, 237-257. 2308

This is a report of a comprehensive investigation into the ecology and control of simuliids infesting the Goose Bay area of Labrador. A 10% D.D.T. sol. in oil was used with success against the larval stages.—D. W. Jolly.

Hess, A. D. (1952). **The significance of insecticide resistance in vector control programs.**—*Amer. J. trop. Med. Hyg.* 1, 371-388. 2309

H. collated the literature relating to the development of resistance to insecticides and discussed the rate of development of such resistance and the specificity of insecticides. In most instances, chlorinated hydrocarbon-resistant strains are not resistant to unrelated compounds, *e.g.* pyrethrum or parathion. Physiological resistance appears to be the major factor, though there were morphological differences in resistant house-flies in Sweden. *Musca nebulo* in India does not develop resistance to D.D.T.

Because resistance can develop so easily there is great need to return to basic concepts of fly-control, *viz.*, elimination of breeding sites and the institution and maintenance of fly-proofing as complementary procedures to insecticide application.—Jas. G. O'Sullivan.

Griffiths, R. B. & Sinclair, K. B. (1953). **The fox as a reservoir of *Linguatula serrata* in Great Britain.**—*Trans. R. Soc. trop. Med. Hyg.* 47, 5. 2310

L. serrata was found in 3 out of 150 heads of adult foxes killed in N. Ireland. The authors suggested that this could explain the high incidence of the nymphal stage of *L. serrata* in the mesenteric lymph nodes of cattle of N. Irish origin.—D. W. Jolly.

I. Olenev, N. O. (1950). **[New data on the toxic effects of some trees on ticks and insects.]**—*Dokl. Acad. Nauk.* 75, 149-151. 2311

II. Olenev, N. O. (1950). **[Effect of the toxic principles of higher plants on ixodid ticks and insects.]**—*Ibid.* 71, 1119-1120. [In Russian.] 2312

I. Larvae and adults of *Ixodes, Dermacentor, Hyalomma, Cimex, Anopheles, Aedes, Drosophila* spp. and *Musca domestica* were killed on exposure in Petri dishes to volatile fractions of either buds, bark, leaves or flowers of one or more of 6 spp. of trees. Details relating to the results of 34 tests with the different products on the different stages of the parasites were given in a table; any of the parts of *Prunus padus, P. maackii* and *P. laurocerasus* will kill all the species tested in from one min., in the case of *M. domestica* and *A. punctor*, to 25–30 min. in the case of *I. ricinus* females. It took 20 min. for vapours from *Eucalyptus botryoides* and *E. paniculata* and 120 min. for that of *Thuja occidentalis* to kill the housefly and the mosquito; trees belonging to *Abides, Picea, Pinus, Betula, Acer, Magnolia* and other spp. were ineffective.

II. Larvae and adults of *Ixodes ricinus, Argas persicus, Pulex irritans, Cimex lectularius* and *Drosophila funebris* placed in Petri dishes or test tubes were killed in up to 15 min. by vapours from macerated buds, bark or leaves of *P. padus* and *P. laurocerasus*. Pulped garlic and lemon rind killed *I. ricinus* larvae in 17–25 min.; leaves of *Th. occidentalis* killed in 2–4 hours; but onion killed only after several days. Orange rind killed *D. funebris* in 20–25 min. Trees of the spp. *Picea, Tilia, Alnus, Sorbus* and *Populus* were ineffective. A table gave details.—F.A.A.

Gur'yanova, M. P. & Dulebov, A. E. (1952). **[*Demodex canis* infestation and its therapy.]**—*Veterinariya, Moscow.* 29, No. 10. pp. 29-32. [In Russian.] 2313

D. canis was present in blood-stained diarrhoeic faeces of a dog with bald skin patches and pustules. P.M. examination revealed the presence of eggs, larvae and adults of the mite in the liver, lungs, spleen, lymph nodes, tongue, bladder and intestines. Six other dogs with various skin lesions were similarly found to have been infested. It is stated that identical *D. canis* infestation was successfully treated in 25 dogs by two i/v injections, 0·5–1·0 ml./kg. at an interval of 3–6 days, of 1% solution of trypanblue and containing 0·4% NaCl, together with treatment of the skin lesions with sulphur, ichthyol-albumin and cod-liver oil mixed in equal proportions.—F.A.A.

Lavoipierre, M. M. J. (1953). **The undescribed male and female of the pigeon quill mite, *Syringophilus columbae* Hirst, 1920.**—*Trans. R. Soc. trop. Med. Hyg.* 47, 7. 2314

L. stated that a female nymph of the pigeon quill mite, *S. columbae*, was incorrectly

identified by Hirst, as an adult female. In the circumstances therefore, L. suggested that the mite should be reclassified, and placed in a new family Syringophilidae.—D. W. Jolly.

Cook, R. (1953). **Murine mange: the control of *Myocoptes musculinus* and *Myobia musculi* infestations.**—*Brit. Vet. J.* **109**, 113-116. 2315

C. described mange of mice in Gt. Britain caused by *Myocoptes musculinus* and by *Myobia musculi*. For the former benzene hexachloride was satisfactory, but not for the latter; for the latter dilute tetraethylthiuram monosulphide was satisfactory.—A.S.

PARASITES IN RELATION TO DISEASE [HELMINTHS]

Becilli, S. (1950). Sugli ospiti intermedi dei piu' frequenti distomi degli animali domestici nel Bolognese. [**The commonest intermediate hosts of flukes in domestic animals in Italy.**] —*Riv. Med. Vet. Zootec.* **2**, 19-32. 2316

For *Fasciola hepatica* and *Dicrocoelium lanceolatum*, the snails *Limnaea limosa* var. *intermedia* and *L. truncatula* were found to be the main intermediate hosts in the hill zone of Bologna; in the plains zone, *Bythinia tentaculata, L. palustris, L. limosa* and *Planorbis complanatus* were the main intermediate hosts of these two flukes, *B. tentaculata* being the most widely distributed and usually the most heavily infested. For *Schistosoma* (species not stated), *L. palustris* and *B. tentaculata* were the most frequent intermediate hosts, *L. limosa* var. *intermedia* and *Vivipara vivipara* being rarely parasitized.—B. Baldelli.

Krull, W. H. & Mapes, C. R. (1952). **Studies on the biology of *Dicrocoelium dendriticum* (Rudolphi, 1819) Looss, 1899 (Trematoda: Dicrocoeliidae), including its relation to the intermediate host, *Cionella lubrica* (Müller). VII. The second intermediate host of *Dicrocoelium dendriticum*.**—*Cornell Vet.* **42**, 603-604. [For part VI, see *V.B.* **23**, 1973.] 2317

The ant, *Formica fusca*, was described as a second intermediate host of *D. dendriticum*. Metacercariae encyst in the insect's abdomen. —E. J. L. Soulsby.

Babero, B. B. & Rausch, R. (1952). **Notes on some trematodes parasitic in Alaskan Canidae.** —*Proc. helm. Soc. Wash.* **19**, 15-17. 2318

A note on the occurrence of *Metorchis albidus, Cryptocotyle lingua, Alaria canis*, and *Lepoderma* (*Plagiorchis*) *massinoi* in Eskimo dogs and in red foxes (*Vulpes fulva alascensis*) in Alaska. The last species is apparently new to North American Canidae.—M. L. Clarke.

O'Sullivan, P. J. (1951). **Parasitic worm diseases of cattle.**—*Qd. agric. J.* **73**, 295-304 & 352-366. 2319

This is a revision of an Advisory Leaflet written by Roberts (1940), *Qd. agric J.* **53**, 136, and deals, in a manner suitable for the stock-owner, with the diagnosis, treatment and control of the helminthiases of cattle, with special reference to Queensland. There are numerous illustrations showing the appearance of the worms to the naked eye and of the snail intermediate hosts of *Fasciola hepatica*, and the paramphistomes.—H. McL. Gordon.

Trüb, C. L. P. & Gaase, A. (1951). Eine Gruppenerkrankung und eine Epidemie an Trichinose und ihre Lehren für die Verhütung und Bekämpfung der Trichinose. [**Trichiniasis.**]—*Arch. Hyg., Berl.* **134**, 163-172. 2320

An account of trichiniasis in man resulting from pork that had been passed as healthy. Sera of 417 patients examined by the c.f. test and by precipitation tests yielded 361 positive, 44 negative and 12 doubtful reactors.—E.G.

Morini, E. G. (1952). Trichonema (Cylicocyclus) radiatum (Looss 1900). [*Trichonema* (*Cylicocyclus*) *radiatum.*] — *Publ. Fac. Agron., B. Aires.* No. 5. pp. 4. 2321

M. described for the first time in Argentina, *Trichonema* (*Cylicocyclus*) *radiatum*, one of the rarer intestinal nematodes of horses.—A.S.

Cauthen, G. E. (1953). **The toxic effect of phenothiazine on cattle of the Gulf Coastal plain area of Texas, and its efficacy in removing *Ostertagia ostertagi* and *Trichostrongylus axei*.** — *Amer. J. vet. Res.* **14**, 33-34. [Author's conclusions modified.] 2322

The results of three experiments indicated that 50- and 60 g. doses of phenothiazine to yearling cattle were not large enough to remove a satisfactory percentage of *O. ostertagi* but were satisfactory for removing *T. axei*.

Doses of 125 g. removed a much greater percentage of *O. ostertagi*, and produced only transitory toxic effects.

Sommerville, R. I. (1953). **Development of *Ostertagia circumcincta* in the abomasal mucosa of the sheep.** [Correspondence.] —*Nature, Lond.* **171**, 482-483. 2323

Third-stage larvae penetrate the gastric mucosa 3–4 days after they have been ingested.

Thereafter, some may leave the mucosa after the third ecdysis and live on the surface; others leave later. Occasionally, groups of larvae form flattened nodules. Preliminary observations suggest that phenothiazine is less effective against *O. circumcincta* than against *Trichostrongylus* spp.—G. B. S. Heath.

Pegreffi, G. & Quesada, A. (1952). Le synthetocaulosi caprina. (Broncopolmonite diffusa da larve e da uova). [*Protostrongylus* **infestation in goats.**]—*Clin. vet., Milano.* **75,** 44-50. [English and French summaries.] **2324**

Forty goats with *P. rufescens* infestation were treated by i/v injection of soluble sodium or calcium salts of phenothiazine, it was claimed with satisfactory results.—I. W. Jennings.

Roberts, F. H. S., O'Sullivan, P. J. & Riek, R. F. (1952). **The epidemiology of parasitic gastro-enteritis of cattle.**—*Aust. J. agric. Res.* **3,** 187-226. **2325**

A comprehensive summary of investigations carried out in Queensland, mainly on *Haemonchus contortus, Bunostomum phlebotomum, Cooperia punctata, C. pectinata* and *Oesophagostomum* (*Bosicola*) *radiatum,* all of which caused disease in dairy cattle in coastal regions. In beef cattle which are usually depastured further inland *H. contortus, O. radiatum* and to a less extent *O. phlebotomum* were of greatest importance. *Ostertagia ostertagi* and *Trichostrongylus axei* were seldom seen in pathogenic numbers. *Strongyloides papillosus* and *Moniezia* spp. were also noted.

Pathogenic infestations were confined to young cattle, 3 to 24 months old. Among dairy cattle the most susceptible age was from 4 to 12 months, and in beef cattle the few months after weaning. Most outbreaks occurred in the drier and colder months of winter and early spring when nutritional conditions were poor.

Seasonal changes in worm burdens were studied. They usually revealed increase to a peak for each species, a fairly rapid decline and persistence at a low level until observations were discontinued at 18 months of age. Climatographs of the regions where trials were carried out were dicussed.

Cattle developed strong resistance to infestation during the first 18 months of life. Resistance appeared first against *Cooperia* spp. (about 5 months), was strongest against *O. phlebotomum* and weakest against *H. contortus.*

General control measures were discussed and comments made on the efficiency of anthelmintics.—H. McL. Gordon.

Cauthen, G. E. (1953). **The effect of small daily doses of phenothiazine on the development of larvae of the gastrointestinal parasites of cattle.**—*Amer. J. vet. Res.* **14,** 30-32. **2326**

Two hundred and seventy-five faecal samples were cultured from 4 yearlings and 5 calves and the percentage development of larvae determined in 258 cultures. In control cultures an av. of 60% yielded positive results. When doses of 0·5, 0·7, 1·0 and 1·5 g. of phenothiazine were given daily in the food, nematode eggs developed in 13%, 25%, 0·9% and 0·6% respectively.—A.S.

Moyle, V. & Baldwin, E. (1952). **Volatile fatty acids of *Ascaris lumbricoides* from the pig.**—*Biochem. J.* **51,** 504-510. **2327**

The proportion of lower fatty-acids in the perienteric fluid of *A. lumbricoides* was less than 20%; that of methylethylacetic acid was 46% and of the C_6 acid 35%. All were products of the metabolism of the worm and not of bacterial activity.—Jas. G. O'Sullivan.

Nagai, A. (1951). [**Influence of anthelmintics on the egg-laying capacity of the pig ascarids *in vitro.*] (Report III.)**—*Osaka Daigaku Igaku Zassi* [Med. J. Osaka Univ.: Jap. Edit.] **3,** 335-343. [Abst. from abst. in *Trop. Dis. Bull.* **49,** 530. (1952).] **2328**

The average length of the survival of ascarids reared in 1/20,000 hexylresorcinol 1% saline solution at 30° and 38°C. were 3·6 days and 2·1 days respectively. The eggs were laid better at 38°C., but in each case a decrease in egg-laying capacity was seen.

On the second day of rearing in the saline solution at 38°C., ascarids were immersed in 1:20,000 hexylresorcinol at 38°C. for 3 hours and 6 hours respectively. In the former case, there was no effect upon the survival time but egg-laying capacity decreased initially and then tended to increase. In the latter case, the survival time was shortened, and egg-laying capacity decreased.

Hupka, E. & Behrens, H. (1952). Prüfung der Verträglichkeit des Wurmmittels Phenothiazin bei Ferkeln und Läuferschweinen. [**Phenothiazine tolerance in piglets and store pigs.**]—*Tierärztl. Umsch.* **7,** 322-326. **2329**

In tests of tolerance to phenothiazine carried out on 48 healthy piglets and pigs aged from 6 weeks to 5 months it was found that a dosage of 0·5 g./kg. body wt. was well tolerated.—R. Marshall.

Innes, J. R. M. (1952). **Cerebro-spinal nematodiasis: a nervous disease of animals caused**

by immature nematodes (*Setaria digitata*) and its relationship to kumri of horses in India.—*Indian vet. J.* **29**, 81-86. **2330**

The immature nematode, *S. digitata*, produces epizootic neuroparalysis in goats, sheep and horses associated with encephalomalacia. The author suggested that kumri in horses in India may also be caused by the migrations of *Setaria* in the spinal cord.—P. R. K. Iyer.

See also abstr. **2366** (husk); **2431** (report, Canada).

SPONTANEOUS AND TRANSMISSIBLE NEOPLASMS AND LEUCAEMIAS [INCLUDING FOWL PARALYSIS]

Cotchin, E. & Hall, L. W. (1953). **A malignant meningioma invading the cerebellum of a dog.**—*Brit. Vet. J.* **109**, 116-118. [Abst. from authors' summary.] **2331**

An account of a malignant meningioma in the right half of the cerebellum of a bitch in which there were nervous symptoms.

Hartwell, J. L. (1951). **Survey of compounds which have been tested for carcinogenic activity.** pp. 583. Washington, D.C. Public Health Service Publication, No. 149. 2nd Edit. $4.25. **2332**

This is a revised edition of the list published in 1941 [*V.B.* **13**, 1574]. The present list includes 1,329 chemical compounds of which 322 caused malignant tumours in animals as compared with 696 compounds in the first list of which 169 were said to produce cancer. The data are given in tabular form under the headings reference, animal, strain or type, sex, preparation and dose, site and route, number of animals with tumours and number surviving and duration of experiment. Experiments on all vertebrates except fish are included.

—C.M.S.

Karlson, A. G. & Mann, F. C. (1952). **The transmissible venereal tumor of dogs: observations on forty generations of experimental transfers.**—*Ann. N.Y. Acad. Sci.* **54**, 1197-1213. **2333**

A general review is given of knowledge on venereal tumours of dogs.

The tumour was passed through 40 generations using a total of 601 dogs in 62 groups. Of these, 37 dogs died of other causes; 385 of the remaining 564 dogs developed palpable tumours at the site of implantation. The percentage of infected animals varied between 30% and 95% from generation to generation. The earliest appearance of tumours was recorded in 2 dogs 15 days after transplantation. Within 30 days 37% had palpable tumours at the site of implantation and 88·7% by the end of 60 days. The rate of regression and disappearance of the transplanted tumours was high; 17% lasted less than 41 days. More than half of the infected dogs recovered spontaneously within 80 days. Only 13% of the dogs retained the tumour longer than 6 months.

The variable percentage of successful transplants and the high incidence of spontaneous regression of the experimentally transmitted tumour detracts from usefulness of this neoplasm for studies in experimental therapy.

—C.M.S.

Ginder, D. R. (1952). **Rabbit papillomas and the rabbit papilloma virus; a review.**—*Ann. N.Y. Acad. Sci.* **54**, 1120-1125. **2334**

A general review. No evidence has been produced, as yet, to support the hypothesis that variation plays a role in the development of carcinoma in the rabbit papilloma.—C.M.S.

Luque, F. G. (1951). Contribución al estudio de la neurolinfomatosis ocular en las aves de Colombia. **[Fowl paralysis in Colombia.]**—*Rev. Fac. Med. vet., Bogotá.* **20**, 319-327. **2335**

A general note on fowl paralysis and its diagnosis by clin. symptoms and by P.M. findings.

Some unsuccessful attempts at treatment with various chemical substances were described, but L. laid emphasis on the importance of prophylactic measures, including selective breeding from resistant birds, segregation of young and breeding stock, and care in preventing contact with birds from other farms.

—A.S.

Darcel, C. le Q., Lancaster, J. E. & Gordon, R. F. (1952). **Observations on the mortality in three flocks of poultry, with special reference to the incidence of leukosis.**—*Brit. Vet. J.* **108**, 338-346. [Authors' summary modified.] **2336**

The authors recorded the levels of mortality in three flocks of poultry during the years 1948–50. Losses due to neoplastic diseases in general accounted for a very high percentage of deaths during the 5–12 months of age period.

The avian leucosis complex accounted for the major proportion of these losses.

There were variations in types and incidence of the leucosis complex. In Flock 1 the incidence varied from year to year and between the two breeds, Brown Leghorns and Canadian Barred Rocks, although both breeds were maintained under the same conditions of management. In Flock 2 the incidence of leucosis was highest in the White Leghorns, both in the 1949 parent stock and in their progeny. In Flock 3 the greater proportion of the leucosis mortality was due to neural lymphomatosis, this type being uncommon in the other two flocks.

BURMESTER, B. R. (1952). **Studies on fowl lymphomatosis.**—*Ann. N.Y. Acad. Sci.* **54,** 992-1003. 2337

A general review of host reactions, modes of natural transmission and the nature of the agent of visceral lymphomatosis.—C.M.S.

MEYER, L. M., SCHWARTZ, S. O., SAWITSKY, A., BEYERS, M. R., RITZ, N. D., BRAHIN, C., DIEFENBACH, W., KLEINSCHMIDT, W. & FRIEDMANN, I. (1952). **Treatment of lymphomatous diseases with triethylene melamine.** —*Acta med. scand.* Suppl. No. 272. pp. 36. [In English.] 2338

Seventy two human beings with lymphomatous disease were treated with triethylene melamine *per os* in courses of 5–20 mg., total doses ranging from 15 to 165 mg. The response was as follows, in decreasing order of efficiency: chronic lymphocytic leucaemia, chronic myelocytic leucaemia, Hodgkin's disease, lymphosarcoma, multiple myeloma and acute leucaemia.—G. P. MARSHALL.

See also abst. 2439 (book, oestrogens and neoplasia).

NUTRITIONAL AND METABOLIC DISORDERS

BALCH, C. C., BALCH, D. A., BARTLETT, S., JOHNSON, V. W. & ROWLAND, S. J. (1952). **Factors affecting the utilization of food by dairy cows. 5. The digestibility and rate of passage of foods during L-thyroxine administration.**—*Brit. J. Nutr.* **6,** 356-365. 2339

The oral administration of 100 mg. thyroxine daily caused an increase in the metabolism of 4 Shorthorn cows. There was no concomitant increase in the digestion of protein and fat, or in the total time taken for food to pass through the gut. A slight discrepancy in some figures may have been due to an increase in digestibility of crude fibre in the reticulo-rumen being balanced by an increased rate of passage through it.—A. SEAMAN.

WALLACE, H. D., BRAUDE, R. & CUNHA, T. J. (1952). **The comparative value of various antibiotics in swine rations.**—*Nutr. Symposium Ser.* No. 5. pp. 121-129. 2340

Aureomycin and terramycin were generally most effective in causing improved growth; level of antibiotics required for best results was not established; better response was obtained from young or unthrifty pigs than from larger ones and with a poor ration than with one having a higher protein content; unweaned piglets responded well to feed containing antibiotics; pregnant or lactating sows were not benefited. —R. MARSHALL.

CARRÈRE, L., ROUX, J. & MAURY, F. (1952). Flore microbienne intestinale des cobayes traités par divers antibiotiques. [**The intestinal microflora of g. pigs treated with various antibiotics.**] — *Rev. Immunol.* **16,** 406-411. 2341

A study of changes of faecal flora in g. pigs treated *per os* with terramycin, aureomycin and chloramphenicol. The antibiotics were given at a dose of 30 mg./day for 10 days, and the changes in flora noted daily.

Terramycin and aureomycin exerted a selective action resulting in the partial or complete disappearance of staphylococci, coliform organisms, and certain others, while resistant organisms, notably *Proteus* and *Streptococcus faecalis* multiplied so markedly that the total floral population was approx. doubled. Chloramphenicol, in contrast, inhibited the growth of the intestinal flora as a whole, without selective action.

Treated animals became undernourished; some became emaciated and died.—A.S.

SWINGLE, K. F. & MARSH, H. (1953). **The relation of limited water consumption to the development of urinary calculi in steers.**—*Amer. J. vet. Res.* **14,** 16-18. [Authors' summary modified.] 2342

Twelve steer calves about 6 to 7 months old at the beginning of the experiment were held for nearly 3 months on a very limited water intake and fed grass hay. The volume of urine excreted was markedly decreased, the specific gravity was correspondingly increased, and the pH was slightly increased.

There was no evidence of any interference with the passage of urine through the urethra,

and no evidence that minimal water consumption may be an important factor in the occurrence of urolithiasis in weaner calves.

It was found that the minimum daily water intake to prevent rapid loss of wt. and severe constipation was 6 quarts per head per day for steer calves of av. wt. 438 lb. fed on grass hay.

URBÁNYI, L. (1951). **[Water requirements of rabbits in relation to the nature of the food.]** —*Acta vet. hung.* **1,** 347-352. [In Russian. German summary.] **2343**

To ascertain the rabbit's requirements for water and the influence various foods exert on it, U. added per 1 kg. live wt. 1·88 g. calcium carbonate, 0·41 g. ammonium dihydrogen phosphate, 1·46 g. sodium bicarbonate, and 0·36 g. ammonium chloride respectively to the standard ration of 4 groups of rabbits; drinking water was unrestricted to all groups including controls. Records were kept of live weight, food intake and urinary and faecal output. It was found that with fodders giving abnormal alkaline or acid reaction water consumption increased by up to 118% while the quantity of dry food eaten decreased. A greater intake of water is apparently necessary to balance any change in food. Details were set out in a table.—F.A.A.

NORDIO, C. B. (1952). Sull'azione della luce nell'anemia da "Allium cepa". **[Action of light on the anaemia which occurs in rabbits fed on onions.]**—*Arch. vet. Ital.* **3,** 289-296. [English, French, German and Spanish summaries.] **2344**

Previous experiments showed that onions fed in excess produced anaemia in rabbits and other animals. Light may have some influence since it affects r.b.c. development. To study this, rabbits were fed 500 g. of onions daily and divided into 2 groups, one being kept in the dark. Both groups developed anaemia, but this developed more slowly in the rabbits kept in the dark and eventually became more severe than in the animals kept in the light.

—J. A. NICHOLSON.

PEIRCE, A. W. (1951). **The effect of the ingestion of urea on the rate of wool production by Merino sheep.**—*Aust. J. agric. Res.* **2,** 435-446. [Author's summary modified.] **2345**

Urea did not increase the wool production of mature sheep when added at the rate of 15 g. daily, equiv. to 7 g. nitrogen, to a low protein ration containing a high proportion of "fibre". An equiv. amount of nitrogen, in the form of wheat gluten, when added to a similar basal diet, however, led to increases of 35% in total wool production and 11% in fibre diam.

The addition of 15 g. urea to a low protein ration which contained a high proportion of a readily available carbohydrate (potato starch) brought about increases of 32% in total wool production and 9% in fibre diam. An equiv. amount of nitrogen in the form of wheat gluten, when added to a similar basal diet, led to increases of 64% in total wool production and 17% in fibre diam.

DAVIS, R. L., BRIGGS, G. M. & SLOAN, H. J. (1953). **Effect of cobalt in diet of the chick.** —*Proc. Soc. exp. Biol., N.Y.* **82,** 175-177. [Authors' summary modified.] **2346**

Chick growth was stimulated by the addition of 10 to 100 mg. of cobalt sulphate per kg. of a corn-soya bean oil meal diet which was deficient in vitamin B_{12}. When similar levels of cobalt sulphate were added to the same diet supplemented with ample vitamin B_{12} they produced no observable effect.

I. LAHEY, M. E., GUBLER, C. J., CHASE, M. S., CARTWRIGHT, G. E. & WINTROBE, M. M. (1952). **Studies on copper metabolism. II. Hematologic manifestations of copper deficiency in swine.**—*Blood.* **7,** 1053-1074. **2347**

II. GUBLER, C. J., LAHEY, M. E., CHASE, M. S., CARTWRIGHT, G. E. & WINTROBE, M. M. (1952). **Studies on copper metabolism. III. The metabolism of iron in copper deficient swine.**—*Ibid.* 1075-1092. [Authors' summaries modified.] **2348**

I. Of 70 piglets removed from their dams at 8–10 days old and fed evaporated cows' milk, 10 were given supplementary copper and iron, 46 suppl. iron only and 10 suppl. copper only, the remaining 4 receiving no supplement. Those deficient in copper developed skeletal abnormalities, microcytic hypochromic anaemia, leucopenia, neutropenia, normoblastic hyperplasia of the bone marrow, hypoferraemia, an increase in the iron-binding capacity of the plasma, hypocupraemia and reduced erythrocyte copper as well as tissue copper. No abnormality in porphyrin metabolism was observed and tissue as well as erythrocyte catalase activity was not significantly reduced. Following the administration of copper, the blood of the animals was rapidly and completely restored to normal. Those deficient in iron developed a severe microcytic, hypochromic anaemia, normoblastic hyperplasia of the bone marrow, hypoferraemia and an increase in the total iron-binding capacity of the plasma. No abnormality in copper or porphyrin metabolism was observed in these animals except for a slight elevation in the plasma copper level and a

marked increase in liver copper. Those deficient in both copper and iron developed all the manifestations noted in the copper-deficient pigs. These changes occurred more rapidly and to a greater degree than in those with a deficiency of either element alone.

The morphological and biochemical similarities between anaemia due to copper deficiency and that due to iron deficiency suggest that in copper-deficient swine there is an abnormality in the metabolism of iron and that, furthermore, the anaemia may be the consequence of this abnormality.

II. In this study of the metabolism of iron in piglets made anaemic by feeding a milk diet low in copper, evidence was presented that in such animals there is (1) impaired ability to absorb iron from the gastro-intestinal tract; (2) incomplete mobilization of iron from the tissues; and (3) inability to utilize parenterally administered iron for haemoglobin synthesis even when it is presented to the bone marrow in normal quantities.

BLACK, A. L., KLEIBER, M., SMITH, A. H. & RALSTON, N. P. (1953). **Mobility of skeletal phosphorus in a mature dairy cow as determined with radioactive phosphorus.**—*Proc. Soc. exp. Biol., N.Y.* **82,** 248-252. [Authors' summary copied *verbatim.*] **2349**

Radioactive P^{32} was injected intravenously to measure the "labile" phosphorus pool in the skeleton of a mature, lactating dairy cow. This pool contains about 1% of the total skeletal phosphorus which was 15 times as large as the total circulating phosphorus pool in the plasma. Autoradiograms and radioassays indicated that this labile pool extended throughout the skeleton but its distribution was determined by the type of bone involved. Cortical bone contains only one-third as much phosphorus in the labile state as does trabecular bone. About 12% of the injected phosphorus-32 was present in the skeleton at the time of slaughter of the animal, 3 days after the injection.

DUCKWORTH, J. & HILL, R. (1953). **The storage of elements in the skeleton.**—*Nutr. Abstr. Rev.* **23,** 1-17. [Authors' summary copied *verbatim.*] **2350**

The metabolic behaviour of bone is not uniform throughout the skeleton or within a single bone. Some of the conflict between the results from different workers can be traced to differences in the bones, or parts of a single bone, chosen for study.

The skeleton serves as a storage organ liberating large quantities of calcium and phosphorus by resorption during lactation and egg laying. When the demands of these processes diminish the skeleton rebuilds its reserves.

Magnesium and sodium also can be liberated from the skeleton to meet the physiological needs of soft tissue. In this case the bone functions as a reserve without undergoing resorption.

Many other elements normally foreign to the body are readily stored in bone, once they have been introduced into circulation by absorption from the gut, by injection or by inhalation. Some of these elements are stored as components of the bone salt; others seem to be combined with the organic matrix. Some are tenaciously retained by the bone; others are gradually liberated. Once deposition has taken place therapeutic means of removal are generally ineffective, except where they involve generalised resorption of the bone mass.

The deposition of foreign elements is usually in the zones of greatest metabolic activity, in part, perhaps, because these are the regions most plentifully supplied with blood carrying the element. In some cases there is subsequent redistribution of the foreign element, in others not.

This localisation of elements in metabolically active regions may be of great importance when the foreign element is radio-active. These zones are rich in bone cells and are subject to disproportionate amounts of radiation when radio-active elements are deposited in their vicinity. The misleading nature of the results that can be obtained when radio-active material is injected is shown by the studies of uranium metabolism.

WOLBACH, S. B. & HEGSTED, D. M. (1952). **Vitamin A deficiency in the chick. Skeletal growth and the central nervous system.**—*Arch. Path.* **54,** 13-29. [Authors' summary copied *verbatim.*] **2351**

The results of vitamin A deficiency upon skeletal growth in young chicks are, except for differences in the patterns of endochondral bone growth, similar to those in young mammals. All sequences concerned in skeletal growth are retarded before growth as a whole (estimated by weight increase) is materially affected and before there is extensive replacement of glandular epithelium by stratified keratinizing epithelium. Linear growth of long bones and the vertebral column and the growth of the cranium become retarded and finally completely suppressed by failure of endochondral bone growth. All epiphyseal cell sequences are retarded, namely, multiplication, growth and maturation. Concurrently and in consequence there results

retardation of tunneling and of ossification. In vertebrae and skull, complete suppression of endochondral growth may occur.

In contrast to mammalian bone growth, appositional bone formation ceases early, so that localized appositional bone growth concerned in the formation of some normal bony contours is not found disproportionate to endochondral bone growth. The effect upon epiphyseal cartilage is distinctive and specific and is a primary result of vitamin A deficiency in the sense that it is not secondary to inanition.

The neurologic disturbances of vitamin A deficiency in the chick are the result wholly of compression of the central nervous system produced by retardation of growth of vertebrae and bones of the cranium.

MÁRKUS, J. & GAÁL, M. (1952). Karotaetetési kísérlet anyajuhokkal a szaporulat növelésére. **[Effect of feeding carrots on the fertility of ewes.]**—*Mag. Allator. Lap.* **7,** 334-337. [English and Russian summaries.] **2352**

One hundred and fifty-seven ewes were kept on carotene-deficient pastures. Except for 50 controls, they were fed with carrots for 18 days prior to service. The rate of oestrus, the birth rate and the number of lambs were higher than in the controls.—R.M.

BACIGALUPO, F. A., CULIK, R., LUECKE, R. W., THORP, F., JR. & JOHNSTON, R. L. (1952). **Further studies on vitamin E deficiency in the lamb.**—*J. Anim. Sci.* **11,** 609-620. [Authors' summary modified.] **2353**

The main manifestation of vitamin E deficiency was muscular weakness which developed parallel to the muscular dystrophy. Evidence of muscular defection were wobbling joints, dragging feet, mild stiffness of the legs and a peculiar marching gait. Treatment with *dl*-α-tocopherol acetate was again shown effective to cure and prevent vitamin E deficiency in the lamb. Histological changes of skeletal muscles due to vitamin E deficiency can be described as a process involving hyaline degeneration of the sarcoplasma and a coagulation necrosis in the presence of cellular infiltration. Except for the absence of giant cells in the degenerated cardiac muscles, the heart lesions were similar to those of skeletal muscles. They progressed from the endocardium to the epicardium without damaging the Purkinje fibres.

The comparison of symptoms and histological findings in vitamin E deficient and "stiff lambs" suggests the possible influence of other factors in addition to the absence of tocopherols in the case of "stiff-lamb" disease.

FORENBACHER, S. (1952). B_1-avitaminoza konja novi pogledi na patogenezu i terapiju. **[Vitamin B_1 deficiency in horses.]**—*Vet. Arhiv.* **22,** 1-11. [English and German summaries.] **2354**

Vitamin B_1 deficiency in horses in natural circumstances may be primary in character (*i.e.*, due to lack of vitamin B_1 in the feed) or secondary. In the latter case the deficiency is due to the presence in the ration of anti-vitamin factors such as are contained in *Equisetum arvense, E. palustre* and *Pteris aquilina.*

—I. MARTINI.

LUECKE, R. W. (1952). **The role of B vitamins in the nutrition of the pig.**—*Nutr. Symposium Ser.* No. 5. pp. 112-120. **2355**

Diarrhoea resulted under conditions of vitamin B deficiency. Added nicotinic acid, pantothenic acid and riboflavin promoted growth of piglets on average commercial rations. Cases of diarrhoea in farm bred pigs were improved by administration of B vitamins. Low nicotinic acid in the diet of the sow caused still-births and low pantothenic acid in the diet of the piglets reduced growth rate.

—R. MARSHALL.

JEŽIĆ, J. & JANJATOVIĆ, M. (1952). "Zajuživanje" pojava poremećene aklimatizacije. **[The so called southern wind disease ("zajuživanje") a phenomenon of deranged acclimatization.]**—*Veterinaria, Sarajevo.* **1,** 703-714. [In Croat. Abst. from English summary.] **2356**

A description of the "Southern wind disease", which appears in Yugoslavian sheep suddenly brought from their upland pastures to warm lowland valleys. The disease sometimes affects 50% of a herd, and of these many may die. The symptoms are a general exhaustion and cachexia, leading to a condition in which other infectious diseases are easily contracted. The authors considered the cause to be a metabolic one, the sheep having too little time to acclimatize themselves to their new warm surroundings.—A.S.

V. D. SCHAAF, A., FEDDEMA, J. J. & V. D. KOOI, K. (1953). Behandeling van acetonaemie bij schapen met glycerol en propyleenglycol. **[Glycerol and propylene glycol treatment of ketosis in sheep.]**—*Tijdschr. Diergeneesk.* **78,** 261-265. [English, French and German summaries.] **2357**

Sixty millilitres of glycerin or 30 ml. propylene glycol given by mouth were successfully used in the treatment of 60 cases of pregnancy toxaemia.—R.M.

Seekles, L. & Talsma, D. (1952). **Comparative efficiency of different methods of treating acetonaemia in milch cows, relatively to its etiology.**—*Acta physiol. pharm. néerl.* **2**, 317-464. [In English.] 2358

The alimentary form of acetonaemia may be acute or chronic and is associated with faulty ruminal fermentation and a shortage of easily assimilated carbohydrate. The hormonal form is usually acute. In both, there is a reduction of liver glycogen, an increase of liver lipoid and a reduced blood sugar content. Ammonium lactate given at the rate of 200 g. per day for at least 5 days has given very good results as also has potassium or sodium chlorate, chloral hydrate and in some cases D.O.C.A. (deoxycortone acetate).—J. A. Nicholson.

Thamdrup, C. O. M. (1952). Paresis et eclampsia puerperalis. **[Puerperal paresis and eclampsia.]**—*Nord. Vet.-Med.* **4**, 177-184. [In Danish. English and German summaries.] 2359

T. gave an account of the occurrence of puerperal paresis and puerperal eclampsia in his practice during the period 1915-51, with a graph showing how the disease is connected with the protein content of the feed. A second graph showed the incidence of puerperal eclampsia; it is most frequent in warm, badly ventilated byres and therefore culminates in April and November.—F.E.W.

Vigue, R. F. (1953). **Influence of protein on the milk fever complex: a four year study. III. Eclampsia (puerperal tetany).**—*Vet. Med.* **48**, 70-71 & 74. 2360

Observations were made on 32 cases of eclampsia in the bitch. Recurrences at the time of the subsequent pregnancy were less frequent among animals given an increased protein ration than among animals kept on the original ration.—L. M. Jones.

DISEASES, GENERAL

Bull, L. B. (1951). **The study of etiology and control of sheep diseases in Australia during the half century 1900–1950.**—*Aust. vet. J.* **27**, 237-245. 2361

In a general review, B. described the establishment and development of institutions for the study of diseases of sheep in Australia and gave an account of Australian investigations into sheep diseases caused by micro-organisms, external and internal parasites, plant and mineral poisoning and nutritional deficiencies.—J. D. Steel.

Sumner, K. C. (1952). **The diseases of small animals communicable to man.**—*Brit. Vet. J.* **108**, 246-256. [Author's summary modified.] 2362

A general discussion on conventional lines. —C.M.S.

Rodil Calderón, T. (1951). Notas sobre ornipatología Venezolana. **[Notes on fowl paralysis and on mortality in fowls caused by *Dermanyssus gallinae* in Venezuela].**—*Rev. Med. vet., Caracas.* **10**, 125-127. 2363

The author reported the death of an entire flock of 20 fowls as a result of massive infestation with *D. gallinae*. He also described a case of fowl paralysis.—I. W. Jennings.

Nichols, R. E. (1951). **Physiology of the rumen as it pertains to bloat.**—*Proc. 88th Ann. Meet. Amer. vet. med. Ass.* Milwaukee. Aug. 20-23, 1951. pp. 266-270. 2364

The development of acute bloat may be explained by the fact that cattle are sensitive to changes in feeding habits and are not well constructed anatomically to facilitate easy removal of gases from the rumen. There is little evidence that bloat is caused by over-eating, but mats of tightly packed forage may obstruct the oesophageal opening. The liquid content of the rumen and the quality of the food also play a part in the development of bloat.

—J. A. Nicholson.

Bennett, S. & Halpern, E. (1952). **Bloat survey in the municipality of Kentish, North-West Coast, 1951-52** [Tasmania].—*Tasm. J. Agric.* **23**, 230-234. 2365

This is a general discussion on bloat as it occurs in a dairying district of Tasmania. It is written for dairy farmers and contains no new information except in regard to the incidence in the district surveyed.—D. A. Gill.

Jarrett, W. F. H., McIntyre, W. I. M. & Urquhart, G. M. (1953). **Recent work on husk: a preliminary report on an atypical pneumonia.**—*Vet. Rec.* **65**, 153-155. Discussion p. 156. 2366

A specific pneumonia characterized by cuffing of bronchi by proliferations of lymphoid cells was found in the West of Scotland during investigations into husk. The disease occurred in animals of all ages, from calves a few weeks old to milking cows, but most of the severe cases occurred in animals 3–12 months old. The clin. picture, gross and microscopic lesions,

and preliminary experiments in transmission were described. In addition to probable transmission by contact, the disease was transmitted by intratracheal inoculation of lung suspensions in 35 calves which in one experiment was continued through 6 serial passages. Experiments with filtrates were in progress.

The disease can occur in calves reared indoors. The lesions are unlike those of parasitic bronchitis. The authors suggested that the close resemblance to the lesions of grey lung disease of mice, spontaneous pneumonitis of g. pigs and virus pneumonia of pigs indicates that a virus may be the cause. The occurrence of cuffing pneumonia in cattle may explain the many deaths attributed to husk in which few or no lungworms can be found.—E. G. White.

Orekhov, M. D. & Ped'ko, G. M. (1952). **[Enzootic encephalomyelitis in camels.]**—*Veterinariya, Moscow.* **29,** No. 11. pp. 27-29. [In Russian.] **2367**

A non-infectious seasonal, Dec.–June, outbreak of encephalomyelitis with a morbidity not exceeding 7% but fatal in nearly 100% of the affected camels, has been occurring for some years in Turkmenia. No other species of animals are affected and it occurs only in places with a plague of mice, ceasing with the appearance of spring herbage. P.M., the only lesion was encephalomyelitis. Attempts to infect healthy camels, g. pigs, rabbits and mice with suspensions of the brain and nasal mucus failed, as did suspensions of the larvae of the camel oestrid found in the nasal passages. Suspensions of *Hyalomma detritum* collected from sick camels produced only in mice a syndrome resembling that in camels. It is stated that treatment with hexamethylenetetramine, together with symptomatic treatment, was successful.—F.A.A.

Anderson, A. C. & Hart, G. H. (1952). **Histochemical methods in the study of telangiectasis.**—*Amer. J. vet. Res.* **13,** 359-365. [Authors' summary modified.] **2368**

Telangiectasis develops not from cellular necrosis, but from erosion of hepatic cells, caused by rupture of the endothelium lining the hepatic cord due to the extracellular accumulation of glycogen. Glycogen may accumulate in the space of Dissé as the result of defective glycolytic activity in the dynamic state of glycogen metabolism by the hepatic cell. Hepatic cellular erosion explains the presence of numerous hepatic nuclei, stromal and cytoplasmic elements, and the relatively few leucocytes present in the blood spaces forming the telang lesion. It causes increased blood volume in a portion of the lobule resulting in mechanical distortion of the hepatic cords. The release of glycogen and the higher blood pressure at the periphery of the lobule may explain the common finding of telangiectasis in close association with branches of the portal vein.

Hepatic cords separating the blood spaces further undergo degeneration due to endothelial damage from anoxia to form cavernous blood spaces. The presence of mast cells in larger lesions suggests an anticoagulant activity of these cells.

Hansen, H.-J. (1950-51). **A pathologic-anatomical interpretation of disc degeneration in dogs.**—*Acta orthopaed. scand.* **20,** 280-293. [In English. French and German summaries]. Published in *Medd. Kungl. Veterinärhögsk., Stockh.* **25,** (1950-51.) [Abst. from English summary.] **2369**

In 100 cases of disc prolapse a high incidence was noted in Dachshunds, French Bulldogs and Pekinese—all breeds with a disposition to chondrodystrophy, which H. regards as the basic cause. Protrusion is rare in the cervical region, has not been observed in the thoracic region and is most common in the thoracolumbar region. Disc prolapse presupposes disc degeneration which is much more common than prolapse. Prolapse is a symptom of systemic disturbance: the localization is due to mechanical factors.—H. Boyd.

POISONS AND POISONING

Anon. (1952). **Death from a detergent.**—*Brit. med. J.* Dec. 20th, 1348. **2370**

Although apparently innocuous when properly diluted, concentrated synthetic detergents, which are in general use as cleaning agents and disinfectants, are extremely poisonous if ingested. Rapid death followed ingestion of a concentrated cationic detergent (methyl dodecyl benzyl trimethyl ammonium bromide) by a woman. Rats to which a dose of the detergent equiv. to 370 mg. active ingredient per kg. body wt. was administered *per os* to test its toxicity had violent convulsions and died within 5 min.—A. Ackroyd.

Patrizi, F. & Moriconi, M. (1951). Morte di 10 bovine per avvelenamento da colza. **[Deaths of cattle from rape seed cake poison-**

ing.]—*Atti Soc. ital. Sci. vet.* **5**, 225-227. [English and French summaries.] **2371**

Sudden deaths of 10 cattle out of a herd of 29 were traced to rape seed cake in the ration. The sample contained 0·33% of allyl isothiocyanate and was presumed to have been of Eastern origin. The symptoms and diagnosis were described. The lesions were vesicular in type.—K. J. SINCLAIR.

LEIGHTON, R. E., KUIKEN, K. A. & SMITH, H. A. (1952). **Toxicological effects of toxaphene on dairy cows.**—*J. Dairy Sci.* **35**, 214-218. **2372**

From the limited information available, it appeared that a Jersey cow could consume 5 g. but not more of toxaphene a day without harmful effects.

If forage is sprayed in the quantities normally required for grasshopper control, dairy cows are unlikely to consume enough to be harmful. Cows evidently recover very rapidly from large doses of toxaphene and therefore can probably consume a considerable quantity in any one day without harmful effect. Calves were not harmed by drinking milk from cows fed 0·5 g. of toxaphene daily.

Dairy cows can probably be sprayed safely with 0·5% toxaphene prepared from wettable powder concentrates but not from emulsifiable oil concentrates.—C.M.S.

NAZARENKO, I. K. (1952). [**Poisoning of cattle with sugar-beet leaves sprayed with benzene hexachloride.**]—*Veterinariya, Moscow.* **29**, No. 9. p. 44. [In Russian.] **2373**

A clinical note on poisoning in cattle that had consumed sugar-beet leaves sprayed in the field with benzene hexachloride.—F.A.A.

PHARMACOLOGY AND GENERAL THERAPEUTICS

(For treatment of specific infections see under the appropriate disease)

SELIGMAN, H. (1953). **Production and uses of radioisotopes.**—*Nature, Lond.* **171**, 588-590. **2374**

S. described the uses to which radioisotopes are being put in industry, physical chemistry, biochemistry, zoology and medicine. Of the 600 radioisotopes so far discovered, a hundred of great specific activity can be made conveniently in the chain-reacting atomic pile. The sensitivity with which the smallest amounts of active material can be detected and located without damaging the surrounding material and their emission of beta and gamma radiations makes them important new tools.

—A. ACKROYD.

EDWARDS, S. J. & HASKINS, M. D. (1953). **The determination of antibiotic levels in blood and in milk following parenteral and intramammary injection.**—*J. comp. Path.* **63**, 53-67. **2375**

The authors investigated the persistence of penicillin, aureomycin and streptomycin in the blood of rabbits, goats and cows, after injecting doses of 11 to 25 mg./kg. body wt. by 3 different routes. Penicillin did not persist for more than 6 hours, but concentrations of i/m injected streptomycin were maintained for 12 hours with an extension at a low level for 24 hours. Aureomycin was retained for at least 48 hours when injected s/c or i/m but was eliminated within 24 hours after i/v inj. When injected parenterally the 3 antibiotics were secreted in the milk of the lactating cow, aureomycin and streptomycin being demonstrable in the milk until they were eliminated from the blood stream: penicillin persisted in the milk after its elimination from the blood. The retention of these antibiotics in the milk when incorporated in suitable bases for direct intramammary infusion was also studied.

—A.S.

ROSENBLUTH, M. B., EPSTEIN, F. H. & FELDMAN, D. J. (1952). **Study of antifoaming agents and preliminary evaluation of their use in experimental pulmonary edema.**—*Proc. Soc. exp. Biol., N.Y.* **80**, 691-693. [Abst. from authors' summary.] **2376**

The collapse of the foam which fills the tracheobronchial tree in certain cases of pulmonary oedema would be advantageous in the management of this condition. A method for measuring antifoaming activity *in vitro* was described and the foam-destroying power of various substances compared. Inhalation of a solution of the silicone DC Antifoam A, in ether, reduced by 50% the incidence of pulmonary oedema in rabbits induced by slow i/v inj. of adrenaline.

See also absts. **2156** (penicillin in tick pyaemia of lambs); **2162** (action *in vitro* of penicillin on the organism of ovine gangrenous mastitis); **2170** (effect of oestrogens on TB. in cattle); **2173-2174** (TB.); **2179** (antituberculous substances); **2182-2183** (Johne's disease); **2187** (glanders); **2192** (pasteurellosis); **2198** (aureomycin in calf scours); **2207** (brucellosis); **2237** (phenanthridine compounds); **2287** (effect of antibiotics on experimental feline pneumonitis); **2326-2329** (anthelmintics); **2338** (triethylene melamine treatment of human lymphomatosis); **2340-2341** (antibiotics in nutrition).

PHYSIOLOGY, ANATOMY AND BIOCHEMISTRY

MENSALVAS, F. S. & RIVERA, F. B. (1951). **Pulse rate, respiration, and body temperature of Philippine carabaos.**—*Philipp. Agric.* **35,** 319-328. [Authors' summary modified.] 2377

A study of the pulse and respiration rates and body temp. of 12 Philippine carabaos (domesticated buffaloes) from May 1950, to April 1951, showed that the mean respiration rate was significantly higher in the females than in the males, the mean rates being 27·10 ± 0·177 and 24·56 ± 0·404 respectively.

The mean pulse rate was 54·16 ± 0·108 per min., and the mean body temp. 38·52 ± 0·024°C. in both sexes.

Seasonal fluctuations in temperature and humidity had no effect on the respiratory and pulse rates or on the body temp.

THOMPSON, H. J., WORSTELL, D. M. & BRODY, S. (1952). **Environmental physiology; with special reference to domestic animals. XVIII. Influence of environmental temperature, 0° to 105°F, on hair and skin temperatures of Holstein, Jersey, Brown Swiss and Brahman cattle, with notes on the thermal properties of hair and skin.**—*Res. Bull. Mo. agric. Exp. Sta.* No. 489. pp. 24. [Authors' summary modified. For part XVII, see *V.B.* **23,** 2082.] 2378

The authors studied the temp. of skin and hair in Holstein, Jersey, and zebu cows exposed to environmental temp. between 0° to 105°F., and in Brown Swiss cows and Brown Swiss and zebu yearling heifers exposed to temp. between 40° to 105°F. The temp. of skin and hair increased linearly until the environmental temp. reached about 65°F., after which they continued to rise linearly, but at a reduced rate; at 105°F. the temp. of environment, skin, and hair of all the cattle merge. The non-evaporative cooling rate, "k" in Newton's Law of Cooling, was virtually constant for the hair-to-air cooling, but increased with increasing environmental temp. for the skin-to-hair cooling, indicating that both the peripheral vasomotor control of the skin and the change in hair coating are extremely important factors in rendering cattle tolerant to very low temperatures. The lack of tolerance to heat in cattle is due to a low threshold and narrow range in "sweating".

BRAUDE, R. & MITCHELL, K. G. (1952). **Observations on the relationship between oxytocin and adrenaline in milk ejection in the sow.**—*J. Endocrin.* **8,** 238-241. [Authors' summary modified.] 2379

Intravenous injection of adrenaline simultaneously with one I.U. of pitocin in the sow caused a marked reduction in the amount of milk normally ejected following injection of pitocin alone. A plateau was reached with a dose of approx. 400 μg. of adrenaline and an increase in adrenaline of up to 2000 μg. did not cause any further reduction in the amount of milk ejected. Injection of 1000 μg. adrenaline, 62 to 90 sec. before the injection of one I.U. of pitocin, completely inhibited the ejection of milk associated with the latter. In 2 out of 3 sows a definite, though small, ejection of milk occurred following the inj. of either 400 or 1000 μg. of adrenaline alone. The possible actions of adrenaline in these experiments were discussed.

GARRETT, F. A. & TALMAGE, R. V. (1952). **The influence of relaxin on mammary gland development in guinea-pigs and rabbits.**—*J. Endocrin.* **8,** 336-340. 2380

Spayed female rabbits and g. pigs were treated with α-oestradiol and an extract containing relaxin, after a preliminary course of the steroid alone, the total treatment being limited to 20 days, animals given only oestradiol serving as controls. The data indicated that relaxin enhances mammary development. In the g. pig this was in the form of a general growth stimulus; in the rabbit it appeared to consist of a transfer of emphasis from primary duct development to development of the entire duct system of the gland. The authors concluded that relaxin acts as a potentiator of oestrogen, working with the latter to produce greater and more normal development of the mammary glands.—C.M.S.

RAWLINSON, H. E. & PIERCE, G. B. (1952). **Visible intra-epithelial iron in the mammary glands of various species.**—*Science.* **117,** 33-34. 2381

Stainable iron was found in the alveoli and ducts of mammary glands from mice, rats, g. pigs and pigs. Most iron is present in the resting gland of the mature female after pregnancy and lactation. Iron is also abundant in the early stages of pregnancy, but in some animals it disappears in late pregnancy and during lactation. The findings suggest that the mammary gland develops from apocrine sweat gland tissue.—J. A. NICHOLSON.

KALLIALA, H., KARVONEN, M. J. & LEPPÄNEN, V. (1952). **Release of antidiuretic hormone during nursing in dog.**—*Ann. Med. exp. Fenn.* **30,** 97-107. [Abst. in *Dairy Sci. Abstr.*

14, 923. (1952), copied *verbatim*. Signed: S.E.I.] 2382

Antidiuresis due to nursing, accompanied by increased excretion of sodium, was demonstrated in 3 lactating bitches. The effect was comparable to that produced by 0·1–0·5 mU pituitrin.

Erb, R. E., Goodwin, M. M., Morrison, R. A. & Shaw, A. O. (1952). **Lactation studies. I. Effect of gestation. II. Effect of estrus.**—*J. Dairy Sci.* **35**, 224-233 & 234-244. 2383

I. Eighty-two records were examined. Decline in yield was 3–4 times faster during the 181st–223rd days than during the 101st–180th days of pregnancy. In non-pregnant cows, the rate of decline slowed after 330 days' lactation. The breeds were Holstein, Guernsey and Jersey.

II. Eighty oestrous cycles involving 19 Holsteins were studied. Yield was highest 2 days before and 2–3 days after oestrus. After 100 days' lactation a fall occurred on the day of oestrus. This fall increased as lactation advanced.—C. C. Bannatyne.

Borsetto, P. (1949). Il glicogene del sistema di conduzione cardiaco nei bovini. [**Glycogen in the cardiac conduction system of cattle.**]—*Riv. Biol., Perugia.* **41**, 429-445. 2384

The atrio-ventricular portion of the cardiac conduction system has a high glycogen content, almost all of which can be found in the Purkinje cells. The nodal tissue of the system has a low glycogen content.

The glycogen content of these tissues does not change with age; the glycogen content of the ordinary cardiac cells diminishes and finally disappears in adult animals. B. discussed hypotheses on the functional value and the significance of the glycogen in the cardiac conduction system.—M. Bertani.

Lassoie, L. (1952). Les sinus osseux de la tête, chez la bête bovine. [**The sinuses of the head of the ox.**]—*Ann. Méd. vét.* **96**, 300-322. 2385

A detailed description of the para-nasal sinuses of adult cattle with remarks on their development.—R. N. Smith.

Dobson, E. L. & Jones, H. B. (1952). **The behaviour of intravenously injected particulate material.**—*Acta med. scand.* Suppl. No. 273. pp. 71. [In English.] 2386

The authors studied the behaviour of particulate material, primarily chromic phosphate, when injected i/v into dogs, mice and rabbits, and applied its rate of disappearance from the blood-stream to the measurement of blood flow in the liver. Irradiation of the liver reduced the rate of disappearance. Minimum liver circulation values were given for several animal species.—W. R. Bett.

I. Popov, N. F. & Krotkova, A. P. (1952). [**Secretion of gastric juice in a horse fed a basic fodder.**]—*Veterinariya, Moscow.* **29**, No. 6. pp. 51-53. 2387

II. Kurilov, N. V. (1952). [**Appraisal of the function of gastric juice in a horse by Pavlov's method.**]—*Ibid.* pp. 55-57. 2388

I. A description of the effect exercised on the gastric juice in the horse by grass, new-mown hay, mature hay, oats and bran. Times and intensity of activity of the gastric juice and its qualitative characteristics for each fodder were compared, the quantity of secretion, acidity and free HCl being given for each hour from one hour before a meal to 3 hours after. Seasoned hay had least effect, oats next and the three other fodders most, taking the average of all factors given in a table.

II. Secretion of gastric juice was used as a means of appraisal of the effect various fodders had on the glands of the stomach, with particular reference to certain clinical conditions. Pavlov's fistula was employed. When a sound was used for the introduction of test materials into or withdrawal from the stomach, there was a tendency for the normal secretory functions to be upset.—F.A.A.

Brunaud, M. & Dussardier, M. (1953). Études sur la motricité des estomacs des ruminants. I. Réseau et rumen. [**Motility of the ruminant stomachs.**]—*Rec. Méd. vét.* **129**, 137-154. 2389

A review of the literature, illustrated by the results of experiments conducted with anaesthetized cattle and sheep. Reticulum and rumen were dealt with in this paper.—R.M.

Duncan, D. L. (1953). **The effects of vagotomy and splanchnotomy on gastric motility in the sheep.**—*J. Physiol.* **119**, 157-169. [Author's summary copied *verbatim*.] 2390

The normal, rhythmic activity of the rumen and reticulum, and propulsion of digesta from these organs into the omasum and abomasum, are lost following total vagotomy. Some activity has been observed to return after several weeks, but it differs from the normal type and is not propulsive. Reflex closure of the oesophageal groove in lambs is abolished by total vagotomy and impaired by section of the dorsal abdominal vagus. Rumination is abolished by total vagotomy. As long as a division of the stomach has part of its vagal

supply intact, capacity for propulsive motility remains. The abomasum retains a reduced capacity for propulsive motility in the absence of its vagal supply; delayed emptying and consequent dilatation may occur.

Splanchnotomy is without significant effect on gastric emptying and motility, and does not appear to modify the effects of concomitant vagotomy.

PEETERS, G., GENIE, G. & COUSSENS, R. (1951). **Autonomic innervation of udder in sheep and cows.**—*Arch. int. Pharmacodyn.* **85**, 152-158. 2391

It appears probable that there are no cholinergic fibres in the nerve supply to the udder of ruminants; only postganglionic sympathetic nerves seem to be present.

—G. B. S. HEATH.

BUSH, I. E. (1953). **Species differences in adrenocortical secretion.**—*J. Endocrin.* **9**, 95-100. [Author's summary modified.] 2392

The secretion of the adrenal cortex in several mammalian species was studied by direct analysis of samples of adrenal venous blood, using paper chromatography. All the species examined were found to secrete large amounts of 17-hydroxycorticosterone and/or corticosterone, and some a third compound, provisionally identified as 11-hydroxy-androst-4-ene-3:17-dione. The ratio of 17-hydroxycorticosterone to corticosterone secreted, varied from $<0{\cdot}05$ in rats to <20 in rhesus monkeys, but did not vary appreciably between members of any one species.

In any individual, changes in total secretion rate produced no change in the relative amounts of the different components of the secretion.

A.C.T.H. (adrenocorticotrophic hormone) increased the secretion rate of all components of the secretion.

B. suggested that the species differences observed in adrenocortical secretion are genetically determined, and cannot at present be related to any known differences of adrenocortical function in these species. Observable physiological differences might, however, be discovered, and caution should be exercised in generalizing from the results of A.C.T.H. treatment in the rat and rabbit.

See also absts. **2439** (book, oestrogens and neoplasia); **2440** (book, anatomy); **2441** (transactions of conference on blood clotting).

PUBLIC HEALTH, VETERINARY SERVICES AND VETERINARY EDUCATION

MASON, F. W. (1949). **Supervision of milk production.**—*J. R. sanit. Inst.* **69**, 569-581. 2393

The paper followed the stereotyped lines associated with papers on milk production. M. was in some difficulty when preparing his address as he was conscious of the impending change in the milk and dairies regulations when the Food & Drugs (Milk & Dairies) Act of 1944 should come into force. He pointed out that under the existing regulations officers of at least 12 different bodies had the power to enter a farm premises for inspection purposes and expressed the hope that under the new arrangements this number would be greatly curtailed.

M. considered that the regulations should be made to include goats' milk, the demand for which (as it was unrationed) was rapidly increasing while cows' milk was in short supply in the United Kingdom. He stated that in his experience only in rare cases (*e.g.* on small farms where the farmer and his family do the milking) are consistently good results obtained from poor buildings.

He gave figures for West Sussex which showed that in that county 48·4% of the cattle are in tuberculin-tested (including attested) herds and 31·4% in accredited herds, whereas in 1937 only 5·65% of the animals were in tuberculin-tested herds.

In discussing methods the author said: "A clean bill of health is essential for all those who are engaged in milk production. We often blame the cow for transmitting disease, but seldom remember that man sometimes passes disease to animals". He looked forward to the day when workers connected with food will be medically examined at least every 6 months.

He deprecates the modern tendency to replace steam sterilization of utensils by the use of sodium hypochlorite sterilization. He criticized the different tests used for the cleanliness of milk and pleaded for more uniformity of method so that the producer may not be misled. When the Ministry of Agriculture take over the supervision of milk production the farmer will still get occasional visits from the sanitary inspector to deal with cases of infectious disease and to collect samples, and the food and drugs sampling officer may find it necessary to collect samples in connexion with charges that water may have been added to milk.

M. explained that, owing to lack of space, he was unable to deal with conditions in Scotland, Northern Ireland and Wales.

Tables were appended giving the numbers of tuberculin-tested and accredited herds over a period of years in England as a whole and in certain countries in particular. In discussion on the paper a plea was made for better facilities for milk transport.—D. S. Rabagliati.

Gillogly, L. R. (1952). **Studies of warfarin rat poison.**—*Bull. Calif. Dep. Agric.* **41,** 139-143. [Author's summary modified.] 2394

Alfalfa leaf meal (a source of vitamin K) tends to antidote warfarin (a coumarin derivative), but the effect is probably not significant in ordinary rat baits. A concentration of warfarin as low as 5 p.p.m. in a diet nearly free from vitamin K kills rats at the normal rate. In the same circumstances, rats tolerate 2 p.p.m. for at least one month. This difference provides a means of bioassay for warfarin baits.

Bervoets, W. P. & Damm, A. (1952). Effets raticides du "Tomorin", un dérivé de l'oxycoumarine. **[Rodenticide action of a derivative of hydroxycoumarin.]**—*Ann. Soc. belge Méd. trop.* **32,** 113-120. [Flemish summary.] 2395

Tomorin [3-(α-*p*-chlorophenyl-β-acetylethyl-4-hydroxycoumarin] was found very effective as a rat poison. In the authors' experiments rats were given access to a passage lightly powdered with the poison, which they afterwards ingested in the process of cleaning themselves. All rats in the experiments, including those which passed through the passage only once per day, died within 13 days after a period of listlessness and inappetence. Paleness of the ears was the only visible symptom. —J.D.

Sauer, B. (1950). Der derzeitige Stand der Tierkörperbeseitigung in hygienischer Hinsicht und Vorschläge zur Beseitigung von Mängeln. **[Carcass disposal and suggestions for improvement of existing methods.]**—*Inaug. Diss., Munich.* pp. 56. 2396

In order to put to more economical use offal and condemned carcasses from abattoirs, S. discussed a suitable organization. This would consist of a carcass disposal centre and special transport to it from neighbouring abattoirs. Carcass disposal consists, in principle, of the following stages: (a) cutting or mincing up of the material, (b) extraction of fats, (c) drying and sterilization of residue to yield meat meal. The ten different methods employed in Germany were described.—R.M.

Seddon, H. R. (1951). **Veterinary education in Queensland.** — *Aust. vet. J.* **27,** 250-252. 2397

S. gave an account of the establishment of veterinary education in Queensland in 1936, its temporary suspension during the second world war, the reopening of the school in 1946 and its subsequent development.—J. D. Steel.

Albiston, H. E. (1951). **Veterinary education in Victoria.**—*Aust. vet. J.* **27,** 253-257. 2398

An account of veterinary education in Melbourne. Dr. W. T. Kendall established a private veterinary college in Melbourne in 1888. In 1909 the college was transferred to the University of Melbourne, and a Faculty of Veterinary Science and University Degrees in Veterinary Science were established.

Student enrolment gradually declined, and the University Veterinary School closed in 1928. The considerations leading to closure of the school were discussed.—J. D. Steel.

See also absts. **2165** (avian type tubercle bacilli in cows' milk); **2201-2202** (salmonellosis from eggs); **2203** (*Salmonella* in milk).

REPRODUCTION AND REPRODUCTIVE DISORDERS

Lagerlöf, N. (1951). Über Stand und Ziele der Besamung in Schweden. **[Artificial insemination in Sweden.]**—*Fortpfl. Bes. Haustiere.* **1,** 2-4. 2399

On the 1st Jan. 1950, 270,000 cows (15% of the national herd) were in A.I. societies. The A.I. service is controlled by veterinarians, who as well as collecting semen also inseminate, do pregnancy diagnosis and all sterility treatment required. There are also lay inseminators. L. pointed out the dangers and advantages in A.I., and emphasised the necessity of hygienic control of the work—especially (1) that healthy bulls must be bought and used only for A.I. and (2) that in a herd in which A.I. is practised all cows must be inseminated and natural service must not be permitted.—H. Boyd.

Anon. (1951). Aspetti della fecondazione artificiale in taluni paesi esteri. **[Aspects of artificial insemination in some foreign countries.]** —*Fecond. Artif., Milano.* **12,** 457-460. 2400

A note on aspects of artificial insemination (A.I.) in various countries, consisting of contributions received in reply to a questionnaire on behalf of the L. Spallanzani Institute for A.I. The contributions were signed and were from Davis, P. H. (Nebraska, Lincoln, U.S.A.),

Stegenga, T. (Utrecht), Cordiez, E. (Curaghem-Brussels), Vandeplassche, M. (Ghent), d'Arces, J. (Algiers), Ocampo Otero, N. (Porriño, Spain), Götze, R. (Hanover), Garcia Mata, E. and Newton, O. (Buenos Aires).—I. MARTINI.

BUSTAMANTE, A. A. (1952). Analyse de trois années de Fécondation artificielle faite avec du bétail à laine Karakul. **[Artificial insemination in Karakul sheep.]**—*Zootec. e Vet.* **7,** 373-376. [In French. English summary.] **2401**

Rams employed in artificial insemination must receive a supplementary ration and they should be allowed opportunity for natural service from time to time.—I. MARTINI.

VAN HEERDEN, J. S. (1952). **Some observations on the application of artificial insemination in commercial dairy herds in the Transvaal.**—*J. S. Afr. vet. med. Ass.* **23,** 195-207. **2402**

A.I. was introduced mainly to help in control of venereal disease, particularly infectious vaginitis and epididymitis [Daubney *et al.*, *V.B.* **9,** p. 263]. The author advanced the usual arguments in favour of A.I.—hygiene, upgrading, earlier pregnancy diagnosis and more accurate breeding records.

—C. C. BANNATYNE.

TRIGUEROS, J. A. (1949). La fecundación artificial y el control del grupo sanguíneo de los toros. **[The blood groups of bulls used in artificial insemination.]**—*Rev. Fisiopat. Reprod. anim. Madrid.* **2,** 77-78. **2403**

The Holstein-Friesian Association of America now insists on blood-grouping of bulls used for A.I., in order to verify the parentage of calves when their dams have been inseminated twice or even three times, with different batches of semen.—I. W. JENNINGS.

CALISTI, V. & QUACQUARINI, P. (1952). Ricerche sul potere fecondante del liquido seminale bovino trattato con jaluronidase. **[Potency of bull semen treated with hyaluronidase.]**—*Zootec. e Vet.* **7,** 239-243. **2404**

The addition of hyaluronidase to diluted bull semen did not enhance its potency.

—I. MARTINI.

BANE, A. (1952). **A study on the technique of hemocytometric determination of sperm motility and sperm concentration in bull semen.**—*Cornell Vet.* **42,** 518-531. **2405**

B. compared the effect on sperm motility of various diluting fluids. Optimum motility was given in Ringer's solution. B. also discussed the effect of temperature on motility and the accuracy of the techniques used.

—E. A. GIBSON.

PHILLIPS, H. J. & WIEGERS, H. L. (1952). **Settling rate of turkey sperm on a haemocytometer.**—*Poult. Sci.* **31,** 681-684. **2406**

When turkey semen diluted with distilled water was used, maximal settling of the spermatozoa on to the ruled surface of the haemocytometer had accurred in 8 min.

—F. T. W. JORDAN.

ROTHSCHILD. (1953). **A new method of measuring sperm speeds.**—*Nature, Lond.* **171,** 512-513. **2407**

The technique involves the projection of a cinematograph film of a drop of diluted semen on to a paper having a circle of known radius. The number of spermatozoa in this circle in consecutive frames, and the camera speed, complete the necessary data.—C. C. BANNATYNE.

FEDRIGO, G. (1952). Aspetti della mucosa delle salpingi di pecora, bovina, cavalla e cagna in periodo di gravidanza. **[The mucosa of the Fallopian tube in the ewe, the cow, the mare and the bitch during pregnancy.]**—*Nuova Vet.* **28,** 95-102. **2408**

In pregnant females, the Fallopian tube shows an increase of epithelial surface and an evident lengthening of the cilia. The principal plicae are longer and thicker, the accessory ones being usually more numerous than in non-pregnant females.—I. MARTINI.

BRAKEL, W. J., RIFE, D. C. & SALISBURY, S. M. (1952). **Factors associated with the duration of gestation in dairy cattle.**—*J. Dairy Sci.* **35,** 179-194. **2409**

Variation in length of gestation were correlated with differences in breed, sire, time *in utero* of dam, age of dam, sex and birth weight of foetus, and season of year. Sixty references were appended.—C. C. BANNATYNE.

CORNER, G. W. & CSAPO, A. (1953). **Action of the ovarian hormones on uterine muscle.**—*Brit. med. J.* March 28th, 687-693. **2410**

The final contractile substance in uterine muscle is actomyosin-nucleotide adenosine triphosphate, generally resembling the characteristics of the contractile protein-complex of skeletal muscle but present in a much lower concentration which varies under the varying hormonal conditions of the ovaries. Oestrogen and progesterone alter the myometrial function in opposite directions. Their effects can be counteracted or even reversed *in vitro* by changes of the temperature or the potassium concentration of the perfusing fluid. It is possible that the effects of the ovarian hormones on the myometrium are accomplished by

alteration of the potassium balance of the myometrial cells, thereby modifying the activity of the specific enzyme systems and the whole series of intracellular reactions so that great variations in the functions of the uterus as a whole are produced.—A. Ackroyd.

Burch, G. R. (1953). **Use of progesterone in preparturient prolapse of the vagina.**—*Calif. Vet.* **6,** No. 3. pp. 19 & 31. [Author's summary modified.] 2411

A report of a clin. research survey involving 94 clin. cases of preparturient prolapse of the vagina was presented. Twelve veterinarians in 7 States injected varying doses of Repositol progesterone into these animals to obtain information concerning the value of this treatment. This study indicated that the hormone can be used beneficially, and that the dose required is apparently determined by the severity of the cases. A dose of 1 mg. of Repositol progesterone, per 5 lb. body wt. for mild cases, and up to 1 mg. per 2 lb. body wt. for severe cases, was suggested.—A.S.

Brooks, R. V., Klyne, W., Miller, E. & Paterson, J. Y. F. (1952). **Steroids of pregnant mares' urine. IV. Fractionation of the neutral steroids. Examination of some non-ketonic fractions.**—*Biochem. J.* **51,** 694-707. 2412

The steroids were fractionated into phenols, non-phenols, ketones and non-ketones, and triols. The non-phenolic, non-ketone fraction contained uranediol, two 20-epimeric hydroxysteroids and 7 new compounds of undetermined structure.—A. Seaman.

Alexander, G. & Watson, R. H. (1951). **The assay of oestrogenic activity of *Trifolium subterraneum* L. by increase in uterine weight in the spayed guinea pig. I. Characteristics of the dose-response relationship. II. Assays.** —*Aust. J. Agric. Res.* **2,** 457-479; 480-493. 2413

I. Fresh or dehydrated clover was fed to spayed g. pigs in graded doses over 2 days. The uterine wt. 50 hours after feeding was related to the amount of clover consumed. The characteristics of the dose-response relationship were given in detail, and it was concluded that the relationship of the logarithm of the dose to the log. of the uterine wt. affords a basis for comparing, with definable limits of error, the relative activities, presumably oestrogenic, of most samples of clover.

When graded doses of hexoestrol were administered orally under essentially the same conditions as for clover, a similar dose-response relationship was found to exist. Oral administration of up to 20 mg. of testosterone or progesterone did not cause an increase in uterine wt.

II. The activity of fresh samples of 4 varieties of clover rose to a max. in the mid-winter months, then decreased as the season progressed. However, both the absolute level, and the magnitude and time relations of the changes varied with the different materials. The activity was confined almost exclusively to the lamina; the petiole and stem had little or no activity. Clover from grazed plots had higher activity than that from nearly ungrazed plots. With most samples of clover, there was an inverse relationship between palatability and oestrogenic activity. Dehydration of the clover caused a decrease in activity, but there was little further decrease during storage over a period of 17 months. The activity of a few other species of plants was found to be negligible.—A. W. Braden.

Asdell, S. A. (1952). **Work on breeding troubles of dairy cattle at Cornell University.** —*Vet. Rec.* **64,** 831-833. Discussion pp. 833-836. 2414

The author considered breeding problems from the two major aspects of management and disease. Bad recording frequently meant that poor breeding bulls remained undetected and that cows returning to service were served by different bulls—a practice which facilitated the spread of genital disease. Where cows were not well managed oestrus often passed unnoticed and breeding was affected.

The blood picture was not useful in the detection of poor breeders though it could assist in the discovery of nymphomaniacs. General discussion on the paper touched particularly on hormone therapy and the influence of nutrition on breeding efficiency.

—Ian Newsam.

Likar, I. (1952). Tiho gonjenje—hypoerosia —kod goveda. **[Anoestrus in cattle.]**—*Veterinaria, Sarajevo.* **1,** 801-809. [In Croat. Abst. from English summary.] 2415

A report of an experiment with 50 cows in which oestrus was induced by the injection of oestral hormones isolated from the urine of stallions and injected i/m. Forty-eight of the cows came into oestrus within 30 days, and of these, 41 conceived after mating.—A.S.

Kampelmacher, E. H. (1952). **Micro-biological and histo-pathological examination of sterile cows.**—*Rep. IInd Int. Congr. Physiol. anim. Reprod., Copenhagen,* 1952. **2,** 188-189. [In

English. French and German summaries.] 2416

Report of an investigation into causes of infertility using material collected by uterine biopsy. K. described the technique and apparatus.

In 43% there was agreement between microbiological and histo-pathological findings. 22% of cases of endometritis were bacteriologically sterile and in 16% giving bacterial growth no histological changes were found. A haemolytic micrococcus, which was transmissible, was frequently isolated.—J. M. SWANNEY.

BINELLO, D. (1952). Il germitol (Tricetol) nella cura della sterilità bovina. [**"Tricetol" in treatment of sterility in cattle especially of trichomoniasis.**]—*Gazz. Vet., Milano.* No. 2. pp. 1-7. 2417

Tricetol (or "germitol"), a quaternary ammonium compound, was used in the treatment of various types of chronic and acute metritis in cattle, with good results. No indication was given of the concentrations used.

—I. MARTINI.

See also abst. **2352** (effect of carrots on fertility in ewes).

ZOOTECHNY

MARCHIANI, W. D. (1950). La adaptacion de la raza pardo Suisa en Venezuela. [**Acclimatization of Brown Swiss cattle in Venezuela.**]—*Thesis, Bogota.* Published in *Rev. grancolomb. Zootec. Hig. Med. vet.* **4,** 569-664. 2418

M. finds that Brown-Swiss cattle acclimatize better than Holsteins, those born in Venezuela being superior to imported animals. The pure-breds imported from the U.S.A. were superior to those from Switzerland. He recommends that the government establish herds of pure-bred Brown-Swiss cattle and high grade indigenous cattle to produce a three-quarter B.S. × one quarter indigenous strain, which gives a good milk yield on local pasture.

—R. MACGREGOR.

ROMIJN, C. (1953). Klimaat en huisdieren. [**Climate and domestic animals.**]—*Tijdschr. Diergeneesk.* **78,** 24-33. [English, French, and German summaries.] 2419

A review of literature was given on the influence of environment on the metabolism of man and of some animals (cattle, dogs, some rodents, and camels). Individual differences were discussed. The camel's temperature has a marked diurnal variation and the animal is protected against overheating by its low metabolic rate and its great tolerance for heat.

—C. A. VAN DORSSEN.

MUIRHEAD, D. B. & ALLDEN, W. G. (1952). **Beef production investigations at Hynam—interim report.**—*J. Dep. Agric. S. Aust.* **55,** 348-357. 2420

An interim report of results of the first 14 months' observations of live wt. changes in beef steers on pastures typical of the subterranean clover—annual volunteer grass type in the warm temperate regions of South Australia. Greatest wt. increases were observed in both 1950 and 1951 during the spring months of Oct. and Nov. (up to 2·4 lb. per day). The pastures were insufficient to maintain body-weights between Jan. and April, but consistent increases (up to 1·8 lb. per day) were observed during the winter months of 1951. The results were discussed in the light of pasture production and stock management in the regions.—R. L. REID.

COLEMAN, J. M. & MCDONALD, J. (1952). **Fat lamb raising on irrigation areas. Results of breeding and supplementary feeding trials.**—*Agric. Gaz. N.S.W.* **63,** 345-350. [Authors' summary modified.] 2421

From a series of breeding and supplementary feeding trials with sheep since 1947 the principal conclussions were: There must be a good balance between winter and summer pasture, plus fodder crops to ensure all-year feed and max. growth rate of lambs; supplementary feeding results in better bloom, and less enterotoxaemia; the Merino has no advantage over the cross-bred ewe as a fat lamb mother; low lambing percentages and slow maturity are not compensated for by the post-war rise in the price of finer wool; Border × Merino and Dorset × Merino ewes give the best early lambs; the Dorset × Merino ewe gives the highest lamb returns and lambing percentages and the lowest wool weight per head; Dorset Horn or Suffolk rams give the best early lambs, the Dorset lambs being better fleshed at lighter weights; the Dorset Down and Romney Marsh do not compare with other breeds for lamb production; regular programmes of drenching and paddock rotation must be practised to control worms.

TRIBE, D. E. & GORDON, J. G. (1953). **The critical approach in grazing behaviour studies.** —*Brit. J. Anim. Behav.* **1**, 12-15. [Authors' summary copied *verbatim.*] 2422

The behaviour of a grazing animal does not necessarily reflect its nutritional and physiological requirements. It is therefore unwise to base a system of animal management on recorded observations of behaviour.

The essential criterion to use when comparing the efficiency of different systems of animal management must be animal production. For a complete and critical appreciation of production records, however, it is essential to have a knowledge of the quantity of herbage consumed by the grazing animal together with a record of its behaviour.

MICHAEL, D. T. (1953). **Some observations of grazing behaviour following upon manurial treatment of contrasting pasture types.**—*Vet. Rec.* **65**, 186-189. [Author's summary copied *verbatim.*] 2423

A simple grazing trial with horses afforded access to old and new pasture top-dressed with basic slag, super phosphate and rock phosphate revealed no preference for any particular area, but resulted in a very marked desire for any undressed indigenous herbage, eating of young twigs and a pica for soil, dead wood, sticks and tree bark. Access to a larger area of indigenous herbage and "rubbish" resulted in a gradual return to normal grazing.

PLATT, C. S. (1953). **Maintaining winter egg production by the use of dim red light.**—*Poult. Sci.* **32**, 143-145. [Author's summary modified.] 2424

During the second world war when regulations prevented the use of bright lights in poultry houses facing the coast, trials indicated that exposing fowls all night to the rays from 15-watt red bulbs resulted in an increase in winter egg production. The bulbs were centred directly over and 18 in. above the perch, so that all parts of the roosting area were within 36 in. of a red bulb. The light was so dim that the fowls did not leave the roosts until daybreak, following, in this respect, the habits of birds receiving no artificial light. All birds were fed a standard layer mash *ad libitum* and grain in hoppers for one hour in the late afternoon.

Later research indicated that red bulbs of 10-watt capacity, used for 8 hours from 8 p.m. to 4 a.m., were as effective as all-night light and as satisfactory in maintaining winter egg production as the standard practice of using white light to provide a 14-hour day.

See also absts. **2356** (acclimatization of sheep); **2433** (cattle breeding in Swaziland); **2442** (book, pig production).

TECHNIQUE AND APPARATUS

WILSKA, A. (1953). **A new method of light microscopy.** [Correspondence.] — *Nature, Lond.* **171**, 353. 2425

Two methods were described. In the first, a modification of phase contrast without halo effect, a thin layer of candle soot is deposited on a microscopic objective lens and a narrow ring is freed from soot. In the second method, images of greater contrast and with light values similar to those in the macroscopic world are achieved if the first procedure is partly reversed. The objective lens is coated with soot then wiped clean, except for an area covering the image of the condenser ring aperture.

—L. M. MARKSON.

KUJUMGIEV, I. (1952). Nuovo metodo di colorazione del germe della agalassia contagiosa. **[A staining method for the organism of ovine and caprine contagious agalactia.]**—*Zooprofilassi.* **7**, 457-460. 2426

K. described the use of a single stain composed of azure II—eosin and red magenta (a triphenylmethane derivative) for the demonstration of the organism of ovine and caprine contagious agalactia.—R.M.

GOMORI, G. (1952). **The periodic acid-Schiff stain.**—*Amer. J. clin. Path.* **22**, 277-281. 2427

The McManus histological staining technique (periodic acid followed by Schiff reagent) is based on oxidation of adjacent $-OH$ or $-NH_2$ groups found in polysaccharides and some proteins. Fungi in tissue are shown up clearly.—S. E. FOX.

CRONIN, M. T. I. (1952). **Accurate and rapid haemoglobinometry.**—*Vet. Rec.* **64**, 355-356. [Abst. from author's summary.] 2428

C. described the standardization of the photoelectric colorimeter supplied by Evans Electroselenium Ltd., Harlow, Essex, for the estimation of haemoglobin by the pyridine haemochromogen method and he suggested a method of routine use of the standardized apparatus to obtain accurate results more rapidly.

CHAPLIN, H., JR. & VEALL, N. (1953). **Removal of glycerol from previously frozen red cells. A modified method.**—*Lancet*. **264,** 218-219. 2429

A modification of the citrate method for the removal of glycerin from r.b.c. The two main difficulties encountered in this method—namely that large volumes of wash suspension must be dealt with without repeated centrifuging, and that the separation must be achieved with the minimum of centrifugal force to avoid "sludging"—were overcome by centrifugation in a large conical flask rotated about its axis and exerting a centrifugal force of only 100 g. as compared with 1500–2000 g. in a standard apparatus. The r.b.c. accumulated at the periphery of the lower part of the flask, where an arrangement permitting the continuous slow introduction of fresh wash suspension created a mild turbulence which ensured a very thorough washing of the cells while at the same time preventing "sludging". The clean citrate, freed from r.b.c., was drawn off continuously from the centre of the flask.—A.S.

See also absts. **2171** (diagnosis of TB.); **2204** (diagnosis of brucellosis in horses); **2225** (differentiation of bacteria of the *Cl. welchii* group by the H.I. test); **2258** (electron microscopy of rabies virus); **2259** (rabies virus—brain tissue neutralization test); **2265** (Murray Valley encephalitis complement fixation); **2273** (swine fever virus cultivation).

MISCELLANEOUS

POLYAKOV, D. K. (1952). **[All-U.S.S.R. conference of leading veterinary workers.]**—*Veterinariya, Moscow*. **29,** No. 2. pp. 60-64. [In Russian.] 2430

An account of a six-day conference held in Nov. 1951. The state of veterinary science in the U.S.S.R. was presented, together with results of the Three-Year Animal Husbandry Plan 1949–51, and the tasks lying ahead. Emphasis was laid on the need for ever-improving standards and achievements.

On the credit side stood a list of new vaccines, sera and drugs; also the "ASD" method of tissue therapy [see *V.B.* **23,** 2207], improved media for the growth of viruses, the culture of bacteriophages and of the "bacterial form of equine infectious encephalomyelitis organism". Filtrable forms of some *Salmonella* spp. were described. A number of workers claimed to have converted several species of bacteria into crystalline forms; the isolation of live organisms from so-called "dead" vaccines was said to be no longer a rarity. Boshyan's findings on the nature of viruses and bacteria were referred to as having refuted the metaphysical presentation on the limits of life as exhibited by micro-organisms and had stimulated a new line of research, although opposed by some who were unwilling to try out new ideas. A total of 94 findings was examined and recommended either for general use or for further large-scale tests.—F.A.A.

REPORTS

CANADA. (1952). **Ontario. Annual report of Ontario Research Foundation, 1951.** pp. 26. Toronto: Rous and Mann Press Ltd. [Items of veterinary interest pp. 15-17.] 2431

It has been found that *Leucocytozoon* found in different birds are species specific.

Ascaris devosi n.sp. has been discovered in fisher (*Martes pennanti*) and marten.

—G. B. S. HEATH.

AUSTRALIA. NEW SOUTH WALES. (1952). **Department of Agriculture. Annual report 1950-51.** pp. 68. Sydney: A. H. Pettifer, Govt. Printer. 6s. 3d. [Division of Animal Industry, Hindmarsh, W. L. pp. 26-34.] 2432

Vaccination of adult, non-pregnant cows against BRUCELLOSIS is recommended in herds where the incidence is high. Eight outbreaks of BOVINE CONTAGIOUS PLEURO-PNEUMONIA occurred. Losses from BLACKLEG in calves and yearlings were the heaviest since vaccination was introduced. About 10,000 calves died, including many vaccinated animals. A new vaccine was prepared from strains isolated from outbreaks. One case of JOHNE'S DISEASE was reported. Heavy losses occurred in sheep from BOTULISM following ingestion of rabbit carcasses. Serious losses from "BLACK DISEASE" follow a wet season which favoured the snail host of the liver fluke. *Salmonella typhimurium* was recorded from sheep and *S. cholerae-suis* from swine. A heavy incidence of SWINE BRUCELLOSIS was seen in one herd in which 35% of breeding animals reacted to the agglutination test. SWINE DYSENTERY was controlled by organic arsenicals. ENTEROTOXAEMIA caused losses in goats and vaccination was not effective. Intensive housing systems are advised for control of TB. in fowls. MYCOTIC DERMATITIS was widespread: lesions on lambs may resemble those of CONTAGIOUS PUSTULAR DERMATITIS. MONILIASIS is widespread in fowls

and turkeys. Chick embryo vaccine protects against FOWL SPIROCHAETOSIS, even after 3 years' storage at room temp. SUBCUTANEOUS GRASS SEED ABSCESSES caused losses in young sheep.

Three outbreaks of TRICHOMONIASIS were detected. Slaughter of bulls and sexual rest of cows for at least 3 months appeared to bring about control.

MYXOMATOSIS spread widely in rabbits in New South Wales and adjoining states. Mosquitoes played an important part in the rapid extension of the disease. Secondary outbreaks occurred long distances from original cases within very short periods, *e.g.* over 300 miles within 6 days.

TROMBIDIOSIS occurred in sheep in the Warialda district. SHEEP LOUSE and KED INFESTATIONS were extensive. Application of insecticides by "fogging" did not provide effective control. Field trials on the control of BODY STRIKE BY SHEEP BLOWFLY showed that up to 6 weeks' protection may be achieved by applying D.D.T. or benzene hexachloride (B.H.C.) by plunge dipping or power spraying. Deodorized B.H.C. smoke candles gave satisfactory immediate results against fleas, but there was no residual effect. *Pediculoides ventricosus* caused irritation to men handling hay. Benzyl benzoate treatment of clothing gave protection, and chloropicric fumigation destroyed mites in the stack.

STAGGERS was seen in sheep grazing rye grass and phalaris. In field trials ingestion of *Tribulus terrestris* did not cause ATAXIA in sheep.

Sheep which were fed on 0·75 lb./day of wheat treated with the fungicide, mercury ethyl phosphate ("ceresan"), showed cumulative toxic effects and died up to 3 months later. In the investigations on TOXAEMIC JAUNDICE applications of sulphur (15 cwt./acre) depressed soil pH below 4 and growth of subterranean clover was suppressed.

INFERTILITY in imported bulls was studied, but no obvious cause was discovered. Affected bulls often showed more than average libido with complete aspermia.

Vitamin A depletion of ewes may result in heavy mortality in new-born lambs particularly if associated with enlargement of the thyroid gland.—H. McL. GORDON.

BARNARD, W. G. (1952). **The cattle of the Swazi.** —*Mpisi Ser.* (*Vet. Dep.*). No. 111. pp. 35. [Mimeographed.] 2433

This report deals only with the Mpisi Cattle Breeding Station. The Afrikander herd did not do well, but the Ngieni herd and the cross-breds throve. The school for cattle guards had a successful course. The Station has many difficulties not yet overcome.—R. MACGREGOR.

INDIA, ASSAM. (1949). **Annual report of the Civil Veterinary Department, Assam, for the year 1948-49.** [BHATTACHARJEE, A. N.] pp. 32. Shillong, Assam: Assam Govt. Press. 1s. 4d. 2434

The total mortality in livestock from all causes was 43,957. RINDERPEST was responsible for the majority of the deaths in animals; 135,145 bovine animals were vaccinated and 35,390 passively immunised against RINDERPEST. Prophylactic inoculations were also undertaken against ANTHRAX, HAEMORRHAGIC SEPTICAEMIA and BLACKLEG. The field veterinary staff visited 17,654 villages and carried out preventive inoculations, treatment of non-contagious diseases, castrations, propaganda work, etc.

The newly instituted Veterinary College had 40 students on its rolls. The Veterinary Investigation Officer and the Assistant Veterinary Investigation Officer (Poultry) carried out investigations on various local diseases, the most important being BOVINE CONTAGIOUS PLEURO-PNEUMONIA, BOVINE HAEMATURIA, NEWCASTLE DISEASE, etc.

The total expenditure of the Department was approx. Rs. 580,000.—C. SEETHARAMAN.

INDIA, BIHAR. (1951). **Annual report of the Civil Veterinary Department for the year 1949-50.** pp. lxi. Patna, Bihar: Superintendent, Govt. Printing. Rs. 2.5.0. 2435

An all-round increase in the activities of the department is reported. Mortality figures for various species of animals and poultry due to contagious diseases and the number of animals treated at veterinary hospitals and dispensaries are given in tables. RINDERPEST goat tissue vaccine continued to be produced at the Bihar Veterinary College.

The three-year diploma course at the Bihar Veterinary College was converted into a four-year degree course with affiliation to the University.—C. SEETHARAMAN.

SWEDEN. (1951). Det Civila Veterinärväsendet år 1949 av Kungl. Veterinärstyrelsen. [**Report of the Civil Veterinary Service for the year 1949.**] [BOUVENG, G. A.] pp. 39. Stockholm: Kungl. Boktryckeriet. P. A. Norstedt & Söner. 2436

On the 31st Dec. 1949 there were 687 veterinarians in Sweden, of whom 256 were district veterinarians. Their distribution according to location and work is given in a table.

There were 42 outbreaks of ANTHRAX causing the death of a horse, 39 cattle and 87 mink. Three outbreaks occurred in North Sweden which is usually anthrax free. 791 cattle were slaughtered because of pulmonary TB., 16 for TUBERCULOUS MASTITIS and 29 for TB. of the genital organs. Of the 42,966 animals which were tuberculin tested for the first time, 13·6% gave positive reactions: of 782,732 animals which had been tested before 0·4% reacted positively. The rapid agglutination method of diagnosis of FOWL TYPHOID was tried in 1948 in Kopparbergs county and has been used more widely in 1949. The state regulations for the control of this disease have been improved. Diagnosis of BOVINE BRUCELLOSIS is made by blood agglutination, the ring test on milk and examination of afterbirths in different districts depending upon the progress of the elimination campaign. It is calculated that on the 1st Jan. 1950, 1·04% of the herds in the country (about 20,000 animals) were infected. Control is by isolation and slaughter. There was one case of BLACKLEG (*Cl. chauvoei* infection).

Only 2 outbreaks of F. & M. DISEASE occurred, and these did not become extensive. Control was by slaughter, and by vaccination around the affected farms. There was a reduction in the number of cases of EQUINE INFECTIOUS ANAEMIA associated with examination of horses by liver biopsy before they go out to pasture.

Details are given of meat and milk inspection.—H. BOYD.

BOOK REVIEWS

RIPPEL-BALDES, A. (1952). Grundriss der Mikrobiologie. **[Outline of microbiology.]** pp. vii + 404. Berlin: Springer-Verlag. 2nd Edit. DM. 36. **2437**

The strength of this book lies in its sections on Nutrititon and on Metabolism. In these it is packed with information, almost every sentence a condensed treatise. Throughout, the complexity of the phenomena involved is emphasized; there is no such thing as an optimum, maximum and minimum in general, but only if applied to particular, accurately specified manifestations of life; they vary further as other factors in the conditions of life are made to vary. There is an illuminating little chapter on the "Law of Yield" in which the dependence of the "effective value" of each nutrient on other conditions is dealt with. Through long stretches of the book one loses sight of the wood over admiration of the trees, but in the last section this difficulty is overcome and one obtains a real picture, not only the outline, of the "Position of micro-organisms in Nature". In particular the chapter on Symbiosis is admirable. There are some unfortunate gaps; for instance there are only two woefully inadequate pages on viruses. A grave shortcoming of this book is the utter lack of reliability whenever examples from medical bacteriology are employed. The size of the agent causing influenza is given as 1μ in length and 0·2–0·3μ in breadth, from which it seems that *Haemophilus influenzae* is regarded as the cause of influenza by the author. The vaccinia virus is called "a small round body of doubtful position, (? virus)". The duration of immunity after artificial immunization is, according to the author, 2–3 weeks for diphtheria or tetanus, but many years for typhoid, typhus and smallpox. But he compares here, without saying so, immunity after passive immunization in one group, with that after active immunization in the other. His characterization of antibiotics, while not actually wrong, is very much beside the point.

The index is excellent, but the short list of errata is not nearly complete and the proofreading has obviously been done rather carelessly, as not only printing errors, but uncompleted sentences and very awkward phrases have been left standing.

On the whole, a book that provides a lot of interesting information for the expert, but is misleading in some respects and is too unbalanced to be quite suitable for the undergraduate.—A. MAYR-HARTING.

BAER, J. G. [Professor of Zoology, University of Neuchatel.] (1952). **Ecology of animal parasites.** pp. x + 224. Urbana, Ill.: University of Illinois Press. $5.00. **2438**

The object of this book is to show how parasitism may be regarded as an ecological relationship governed by the same general rules usually applied to any animal and its environment. The first two sections of the book are devoted to a definition of parasitism and a description of the modifications of the parasitic members of the different phyla as adaptations to the parasitic habit. Other sections are devoted to a discussion of host-parasite relationships including host-specificity and immunity, and the physiology of parasites.

The author's task has been made difficult by the many gaps in our knowledge of the fields, which in many cases he has exposed and discussed. The result is an extremely readable and

stimulating book which is attractively illustrated with many excellent line drawings.

—L. P. JOYNER.

BURROWS, H. & HORNING, E. (1952). **Oestrogens and neoplasia.** pp xv+189. Oxford: Blackwell Scientific Publications. Springfield, Ill.: Charles C. Thomas. Toronto: The Ryerson Press. 30s. 2439

This is a very useful survey of present knowledge and conceptions of the role of oestrogens in causing hyperplastic or neoplastic changes in tissues, as shown by experimental work with laboratory animals and by observation in man. Neoplasms have been induced experimentally by oestrogen in many body organs, and the important fact has emerged that they are caused not by a temporary excess of oestrogen, but by a prolonged and incessant supply. The main parts of the book deal with tumours of different organs such as the uterus, ovary, mamma, testis, prostate, pituitary and adrenal. Other chapters are concerned with the sources of oestrogen in the body and the factors controlling its effects, the influence of oestrogen on tissue growth, the prevention and treatment of oestrogen-induced neoplasms, and the production of oestrogen by tumours. Chapters are contributed on the chemistry of oestrogens by C. W. Shoppee and on the chemotherapy of cancer by W. C. J. Ross.—E. COTCHIN.

BOURDELLE, E. & BRESSOU, C. (1953). Anatomie régionale des animaux domestiques. IV. Carnivores chien et chat. **[Regional anatomy of domestic animals. IV. Carnivora, dog and cat.]** pp. viii+502. Paris: J. -B. Baillière et Fils. Fr. 5000. 2440

This volume is in keeping with the earlier members of the series which have dealt with the larger domestic animals. About a quarter of the book is concerned with the position of the carnivora in the animal kingdom, their general morphology and the relation of the domestic to the non-domestic families. A brief anatomy of the systems rounds off this section.

The remainder of the book deals with the dog and cat by regions, the osteology of each part being followed by descriptions of various dissections. The illustrations, many in colour, are on the whole satisfactory; several references are given albeit in the main to French papers and theses. The difficulty of correlating the nomenclature used with that of English and German texts will no doubt preclude its general acceptance in Great Britain.—R. N. SMITH.

FLYNN, J. E. [Edited by.] [Associate Professor of Pathology, College of Physicians and Surgeons, Columbia University, New York] (1952). **Blood clotting and allied problems. Transactions of the fifth Conference January 21 and 22, 1952, New York.** [Sponsored by the Josiah Macy, Jr. Foundation.] pp. 368. New York: Josiah Macy, Jr. Foundation. $4.95. 2441

This book is a *verbatim* report of a conference on certain problems by about thirty experts in this field, and is the fifth in a series. The first 76 pages are devoted to discussion on recent anti-coagulants and a similar amount is given to new clotting factors. There are about a hundred pages on the haemorrhagic effects in experimental animals after irradiation, and a discussion on fibrinolysis.

There is abundant up-to-date experimental information and speculation in these discussions which are well provided with references and adequately indexed. The inclusion of all remarks in this *verbatim* report leads to space being given up to many colloquial and sometimes superfluous comments, but the discussions are stimulating and informative.

—G. FULTON-ROBERTS.

MCMEEKAN, C. P. [Superintendent, Animal Research Station, Ruakura.] (1952). **Pig production.** pp. 166. London: Whitcombe & Tombs, Ltd. 10s. 6d. 2442

This book gives a description of pig keeping in New Zealand where pigs are kept mainly to complete the economic efficiency of the dairy industry through the use of surplus milk, buttermilk and whey. Pig farming is not, as in Britain, an economical industry on its own because of the high costs of imported feeding stuffs. It is of interest to note that the breeds used are, in order of importance—the Berkshire, Tamworth, Large White and Large Black. There is much of general interest in this book.

—P. L. SHANKS.

ANON. (1952). **Soviet science. A symposium presented on December 27, 1951, at the Philadelphia meeting of the American Association for the Advancement of Science.** pp. vii+108. Washington 5, D.C. American Association for the Advancement of Science. $1.25. 2443

In a foreword, in a preface and in a summary at the end emphasis is laid on the state of science in the U.S.S.R. and on the difficulties in interpreting publications from that country. The writers of this review speak of severe limitation of information about Soviet science outside Russia. Political intervention in scientific matters has complicated the interpretations of publications from the U.S.S.R. and the sub-

jugation there of scientific doctrine to an ideology called "dialectic materialism" has posed new problems. The outstanding example is, perhaps, the Lysenko controversy, and here the value of this symposium prepared for the American Association for the Advancement of Science is proved in the first chapter where his theories are analysed and shown to be nothing more than outdated Lamarckism.

The symposium is an able attempt to clarify the Western viewpoint on the post-revolutionary developments in Russia and explain some of their enigmas. This has been well done by presenting an analytical picture of the conditions governing the work of Rusisan scientists and its consequent value. Some of the authors of the articles in this review described the pre-revolutionary development of science there and recounted some now forgotten discoveries, and this gives a comparison between Tsarist and Soviet eras. From this analysis the trends of Russian thought can be better understood and a fair interpretation made of its hitherto puzzling features.

The 9 chapters are on:—Russian Genetics; Russian Physiology and Pathology; Russian Psychology and Psychiatry; Scientific Method and Social Science: East & West; Russian contribution to Soil Science; Soviet Physics and Chemistry; Soviet Mathematics; Science and Intellectual Freedom in Russia; An Appraisal of Science in the USSR.—F.A.A.

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BROWNING, E. (1953). **Toxicity of industrial organic solvents. (Revised in consultation with the Toxicology Committee).** pp. viii + 411. London: H.M. Stat. Off. Medical Research Council, Industrial Health Research Board. Rep. No. 80. (Revised Edit., 1952). 35s.

BURNS, M. (1953). **The genetics of the dog.** pp. viii + 122. Farnham Royal, Nr. Slough, Bucks: Commonwealth Agricultural Bureaux. Technical Communication No. 9 of the Commonwealth Bureau of Animal Breeding and Genetics, Edinburgh. 12s. 6d.

CAULLERY, M., CHATTON, E., DEFLANDRE, G., GRASSÉ, P.-P., HOLLANDE, A., LE CALVEZ, J., PAVILLARD, J., POISSON, R. & TRÉGOUBOFF, G. (1953). Traité de zoologie, anatomie, systématique, biologie. Tome I, fascicule II. Protozoaires: rhizopodes, actinopodes, sporozoaïres, cnidosporidies. [**Treatise of zoology, anatomy, systematics and biology. Vol. I. Protozoa.**] pp. 1160. Paris: Masson & Cie. Fr. 9935.

COPEMAN, W. S. C. (1953.) **Cortisone and ACTH in clinical practice.** pp. xi + 255. London: Butterworth & Co. (Publishers) Ltd. 25s.

HENDERSON, I. F. & HENDERSON, W. D. Revised by KENNETH, J. H. (1953). **A dictionary of scientific terms. Pronunciation, derivation, and definition of terms in biology, botany, anatomy, cytology, genetics, embryology.** pp. xvi + 506. Edinburgh & London: Oliver & Boyd. 5th Edit., revised and enlarged. 32s.

STAMBUL, J. (1952). **The mechanisms of disease. A study of the autonomic nervous system, the endocrine system, and the electrolytes in their relation to clinical medicine.** pp. xxxiii + 746. New York: Froben Press, Inc. $15.

ANON. (1951). **Cold Spring Harbor Symposia on quantitative biology. Genes and mutations. Vol. XVI.** pp. xvi + 521. Cold Spring Harbor, New York: Long Island Biological Association. $9.

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ERRATUM

V.B. **23,** No. 8. Abst. 2278. In title translation, for "enzootic pneumonia of pigs", please read "enzootic pneumonia of piglets".

The Executive Council of the Commonwealth Agricultural Bureaux is a signatory to the Fair Copying Declaration details of which can be obtained from the Royal Society, Burlington House, London, W.1.

List of Abbreviations

A.I. — artificial insemination
ant. — anterior
A.P.F. — animal protein factor
approx. — approximately
aq. — aqueous
av. — average

B.A.L. — British anti Lewisite (2,3 dimercaptopropanol)
b.p. — boiling point

c.f. — complement fixation
clin. — clinical
coeff. — coefficient
conc. — concentration
c.s.f. — cerebrospinal fluid

diam. — diameter
dil. — dilute(d)

E.I.A. — equine infectious anaemia
equiv. — equivalent

ft. — foot (feet) [measurement only]

Hb. — haemoglobin
H.I. — haemagglutination inhibition

inj. — injection(s)
insol. — insoluble
Inst. (inst) — Institute
i/m — intramuscular(ly)
i/p — intraperitoneal(ly)
i/v — intravenous(ly)
i/d — intradermal(ly)

lab. — laboratory (-ories)

max. — maximum (-al)

N.D.V. — Newcastle disease virus
N.D. — Newcastle disease

r.b.c. — red blood corpuscles
r.e.s. — reticuloendothelial system
R.H. — relative humidity

s/c — subcutaneous(ly)
soln. — solution
suppl. — supplement(s) (-ary)
std. — standard

temp. — temperature
therap. — therapeutic

U.V. — ultra-violet

vet. — veterinary
vol. — volume

w.b.c. — white blood corpuscles
wt. — weight

/ — per (*e.g.* wt./vol mg./lb. body wt.)

Bulletins on disease subjects written for farmers and "popular" articles of a similar nature are not included in the *Veterinary Bulletin*. Those of a sufficiently important nature are, however, included in *Index Veterinarius*; so also are certain review articles, presidential addresses, congress proceedings, etc., where the title conveys as much information as could be given in an abstract of a few lines. For information of this nature, readers of the *Veterinary Bulletin* are referred to *Index Veterinarius*, where titles of all publications indexed by the bureau are fully cross-referenced.

A list of annotations and reviews, classified according to subject, is now given in *Index Veterinarius*, being inserted at the end of each number. Such papers will not necessarily be dealt with in the *Veterinary Bulletin*.

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The Editor will be glad to receive books for review in the *Veterinary Bulletin*.